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Bright Outlook for Glens Falls Paper Mills

Reports From Various Manufacturers Indicate Good Year for Paper Industry In This Section —Finch, Pruyn & Co., Running With Larger Force Than Year Ago, Look for Improved Conditions—International Plants at Fort Edward and Corinth Expected to Maintain Volume of Production—Union Bag Expands Output at Hudson Falls

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., January 9, 1933—Prospects of a good year for paper mills and other industries in this section are indicated from reports from the numerous concerns. A trend towards diversified production is noted in some plants and those industries which formerly confined themselves exclusively to news print are now in many instances turning out towels, napkins, handkerchiefs and other novelties. A few are also meeting with success in the production of wall paper.

Some of the larger concerns were quick to take advantage of the benefits offered by the seaport at Albany and the coming year promises to witness a much larger volume of pulpwood imported to this section from foreign countries.

Depression Peak Reached Last Year

Officials of Finch, Pruyn & Co. claim that they are running with a larger force than a year ago and feel that the coming year is sure to show improved conditions. It is contended that the peak in the depression was reached during the past year.

Operations at Fort Edward Near Normal

Operations at the Fort Edward branch of the International Paper Company were conducted on a near normal scale during 1932 and indications are that these schedules will continue. The branch of the same concern at Corinth looks forward to a continuation of good conditions inasmuch as it operated full time during the greater part of last year.

Improvement at Hudson Falls

At Hudson Falls improved conditions are already reflected in the increased production at the Union Bag and Paper Company, where a large number of new hands have been hired.

Paper Mill Equipment Orders Increase

The Sandy Hill Iron and Brass Works also reports an increase in orders for paper mill equipment which is regarded as an encouraging sign.

An early resumption of operations is also predicted for the Standard Division of the United Wall Paper Factories and it is reported that a group of business men are considering a plan to acquire it if it fails to reopen.

Full time schedules are also in effect at the Mechanicville plant of the West Virginia Pulp and Paper Company and operations are being planned at an increased rate during the year.

Start New Cardboard Factory at Los Angeles

Faith in the ultimate return of genuine prosperity is being demonstrated by National Card, Mat and Board Company, manufacturers, of Chicago, in their establishment of another factory at 11422 South Broadway, Los Angeles, Cal.

The new Los Angeles mill is in operation and now serving the Pacific Coast territory. In an interview with C. H. Crysler, who is president of both the Chicago and California companies, he states that the Los Angeles plant occupies a modern, daylight factory building of good size, and is ideally situated for truck, rail, and harbor shipping; also, that the machinery and equipment are modern and quite flexible for the production of various grades of cardboard, including showcard boards, artist and mounting boards, and numerous paper specialties.

Charles W. Crysler, vice president, who has for many years been located at the Chicago plant, is now at Los Angeles, in charge of that division.

These plants are also closely allied with the Card and Paper Works Limited, at Peterborough, Ontario, Canada. The Canadian factory was enlarged, remodelled, and put on a thoroughly up-to-date basis some two years ago, and is progressively serving the Dominion of Canada with similar lines of product. Mr. Crysler states the products have been standardized in each of the three factories; a definite evidence of progress and faith in the return of better times.

Mr. Willson Not to Stand for Reelection

HOLYOKE, Mass., January 10, 1933—Sidney L. Willson, president of the American Writing Paper Company, Inc., will not be a candidate for reelection as president of the American Pulp & Paper Company at their February meeting. He will close a four year service at that time.

Ontario Paper Market Conditions Unsettled

Practically All Paper Manufacturers Affected by Unprofitable Price Levels and Depreciated Currencies—Volume of Business Transacted by Merchants During Past Year Decreases —Demand for Cheaper Grades of Paper Predominates

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 9, 1933—While Ontario paper merchants did a decreased volume of business during the year just closed, and while the profits were small, most of the wholesalers feel that they have done fairly well considering the depressed condition of trade in general. There was a fair turnover of most fine paper lines, with book paper, perhaps, leading, and a lesser turnover of high grade stock and coated papers. Practically all the year there has been a demand for cheaper grades of paper and the better classes have not yet come into their own. Sales of coarse paper lines have been light throughout the year and there was a drop in paper bags. On the other hand the call for flour sacks has kept up well. The board mills had a bad year and the paper box manufacturers have had to be content with lean business.

Dependent on Export Markets

In paper manufacturing circles there was reflected the universal unsettled state of affairs, financial, economical and political and all of the paper companies were up against unprofitable price levels, depreciated currencies and other factors which affected business in general throughout Canada. The wood pulp mills suffered severely from lack of demand in their principal market, the United States, and from the effects of European competition, aided by greatly depreciated currencies. Prices were reduced to unremunerative levels, and many pulp mills were unable to operate.

Exports of wood pulp were smaller this year than for many years past, and in the first ten months of the year amounted to 365,460 tons, valued at $15,750,925, as compared with 512,380 tons, valued at $24,987,988 in the corresponding months of 1931. This represents a decline of 30 per cent volume and of 37 per cent in value. All grades of wood pulp, mechanical, sulphite and sulphate, were affected, and the greatest decline was in shipments to the United States. There was, however, a satisfactory increase in exports of sulphite pulp to the United Kingdom, although not sufficient to offset the decline in shipments to other countries.

At the present time most of the mechanical pulp mills making pulp for sale are closed down. The sulphite mill at St. John, formerly operated by the Nashwaak Pulp and Paper Company, and closed down for some years, was reopened in October by the Port Royal Pulp and Paper Company, which has helped to relieve the unemployment problem in that district.

News Print Is Largest Branch

News print is the largest branch of the industry and the falling off in demand for this grade of paper was such that Canadian mills were only able to operate at much below capacity. In the principal market, that of the United States, there was a decline in consumption of about 13 per cent from the amount used in 1931, and of close to 28 per cent from the 1930 consumption. In practically all of the export markets Canadian shipments suffered severely.

For other grades of paper the Canadian mills depend mainly upon the domestic market, since there is little opportunity for export business in these lines owing to prohibitive tariffs and to competition with countries with depreciated currencies. While production in these grades has been lower than in the previous year, they have not suffered to quite the same extent as news print.

Considering the general state of business in Canada, the demand for book paper, writing paper, tissues, some classes of wrappings, boards and other grades has kept up fairly well, although as stated, the coarse paper market was dull and was probably the worst hit by hard times in the paper industry. All the mills had to operate on greatly reduced scales. The customs duties on imported magazines and periodicals, have been of some benefit to Canadian paper manufacturers, since many of these publications, formerly imported, are now being printed in the Dominion on Canadian-made paper.

The general slackness in business, characterized by a smaller movement of goods, resulted in a greatly decreased demand for boxes, cartons, shipping containers, wrapping papers, etc., with a consequent adverse effect upon the production of those grades. In recent years the Canadian mills have expended a good deal of time and money in research and development work along new lines, and the Canadian mills are now in a position to supply virtually every grade of paper that is necessary for the domestic market.

Pulp Situation Improving in North

The pulp industry in Northern Ontaria reveals signs of improvement, and the outlook of the unemployed citizens of Sturgeon Falls and Espanola, where the Abitibi Power and Paper Company has paper plants, is much brighter. Arrangements have been completed with jobbers to float approximately 175,000 cords of cut pulpwood along the Onaping, Spanish and Vermilion Rivers for use at the now idle plants.

Equipment and plants are now being prepared to conduct the pulpwood drive next spring down the three rivers and foremen and small gangs are now named to commence repairing camps and improve necessary equipment along the water routes. While last Fall pulp was taken from the huge piles at Espanola and floated down to Georgian Bay for boat transport, it is stated in well informed circles that the pulpwood along the three rivers will be taken to the plants for manufacture into pulp.

At Sturgeon Falls, where the paper mill is shut down, 525 families, the major part of the population, are on relief and have been for several years. Skeleton forces have been quietly making improvements and repairs to mill machinery, causing periodical rumors that in the near future the mills would again operate. These statements in the past few years have always been denied by officials. Long rows of empty houses are testimony to the large number of paper makers who have left Espanola, and those remaining, more than forty families, are in receipt of Government relief. The men who left the town for employment in other centers about five years ago did not, for the most part, take their furniture, and homes are ready for immediate occupancy as soon as the paper mill resumes operation.

All the pulpwood to be floated is cut and has been lying along the banks in piles for five years, in some instances. Advices from Port Arthur say that nearly 2,000 men are engaged at work in the forest products industry in that district at the present time. Among the operators cutting pulpwood are Don A. Clark, whose camp is employing approximately 200 men at Hogarth and near Nipigon. The Abitibi company has 200 men in camps located at Onion Lake and Nipigon, and the Provincial Paper Company has 120 men in camp at Hurkett. Oscar Styffel has commenced work at Long Lac with 100 men.

Wall Board and Roofing Materials Output

There are twelve establishments in Canada which produce roofing materials and wall board made principally from paper. They form an industrial group which is treated as a separate industry under the industrial census. Of the twelve establishments which form the industry proper, one was located in 1931 in New Brunswick, four in Quebec, four in Ontario, one in Manitoba and two in British Columbia.

Generally speaking, these firms purchase felt paper and paper board from the paper mills and treat these with different waterproofing and fire-resisting preparations to render them more suitable for roofing and insulating purposes. There was a total of $5,572,835 invested in the twelve plants which form the industry proper.

It gave employment to 170 employees and 343 wage earners, comprising 461 males and 52 females. The total pay roll amounted to $779,054 and the total cost of materials was $2,336,505. The gross value of production was $5,384,592, giving as the net value of production or value added by manufacturer, $3,048,087.

Big Shipments of Pulpwood in Progress

The Thompson & Heyland Lumber Company, Toronto, who specialize in pulpwood, report that November and December were very busy months in the matter of shipments, which averaged twenty cars a day from Northern Ontario. January, also, is opening up well. The wood was consigned to mills in Southwestern Ontario, Pennsylvania and New York State. November was the best month in the matter of shipments since March, 1930, and December car loadings of wood topped any other record in the past five years. The wood is being taken mostly by truck from points in the bush to the railway and loaded directly on cars.

The Thompson & Heyland Company have concluded negotiations for the sale of 80,000 cords of wood during the coming year, about one-tenth of which is poplar. Of the present heavy shipments of wood, one-third is going to the United States. A number of mills are conserving their own supplies at the present time and are using wood from outside sources, which has resulted in the situation becoming quite active so far as shipments are concerned.

Notes and Jottings of The Trade

Quebec Public Service Commission recently decided that the Abitibi Power and Paper Company should have priority floating rights on the feed rivers leading down to Lake Abitibi and from there to the company's mill in Iroquois Falls, Ont. The Abitibi company will purchase 9,000 cords of wood from settlers around the Abitibi district. The priority right will extend from the Spring of 1933 until June 15 of the same year. Other companies owning limits around the district do not object to the proposal.

T. A. Weldon, vice president of Provincial Paper, Ltd., Toronto, celebrated his 79th birthday at his home in Welland on New Years Day. Mr. Weldon is still hale and hearty and is daily seen at the general offices in Toronto or on the road lining up his old customers.

A provincial charter has been granted to Firstbrook Boxes, Ltd., with head office at Mount Dennis, just outside Toronto, where the mill is located. There is an authorized capital of 2,000 preference shares of the par value of $100 each and 100,000 common shares without par value. The company, which is widely known in the paper and wooden box lines, has been established for many years. It was recently acquired by the Robert Gair Company, of New York.

Dr. John S. Bates, former superintendent of the Forest Products Laboratories of Canada, is leaving for England to take a responsible position with Price & Pierce, Ltd., London. He has of late been with Price Bros. & Co., Quebec, as research engineer and chief chemist. Dr. Bates is a former chairman of the Technical Section of the Canadian Pulp and Paper Association. He also spent some time with the Bathurst Power and Paper Company.

The members of the office staff and salesmen of the Fred L. Ratcliff Paper Company, York street, Toronto, were entertained by Mr. Ratcliff, president of the company, at the firm's annual dinner on January 2 at the Royal York Hotel. The event proved a jolly get-together of the staff.

News Print Trade Vital to Canada

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 9, 1933—The Hon. H. H. Stevens, Minister of Trade and Commerce for the Dominion, in a review of the economic condition of Canada at the close of 1932, points out that in spite of the depression in the forestry industry, news print during the past year has made an important contribution to the favorable balance of trade, which for the twelve months ending November last amounted to $49,113,408, as compared with an unfavorable balance of $17,068,783 for the preceding twelve months. Mr. Stevens says:

"In spite of the unfavorable conditions, the output of news print in the first eleven months of 1932 reached 1,780,000 tons, a larger output than in any complete year prior to 1926. Indeed, the news print industry in particular and the forestry industry generally go far to assist our balance of trade with the United States, to which we sent $112,500,000 of wood and paper and their products in the twelve months ended October, 1932, as compared with imports from that country of $18,400,000. Our total exports of wood and its products in the same period were $142,900,000 as compared with imports of $24,200,000. Thus at the present time the contribution of the forestry industry and its manufactured products towards a favorable balance of trade is some $118,700,000, greater than that of any other of the eight main groups into which our production and trade are divided." He added: "The lumber industry in the past year has been almost as hard hit as the agricultural, first by the tariff imposed by the United States on imported lumber and secondly by the lower prices of news print and the disorganization in the paper industry generally. Nevertheless, the preferences obtained from the United Kingdom should assist our lumbermen, while the news print industry has its future largely in its own hands."

New Conveyor-Elevator

A unique type of conveyor that carries materials through enclosed steel casings, horizontally, vertically, up inclines and even around curves, is described in two folders just issued by Stephen's-Adamson Manufacturing Company of Aurora, Ill.

Chicago Paper Market Continues to Mark Time

Paper Merchants Discourage Material Acquisition of Stocks, With View of Keeping Down Inventories—Lasting Benefits Anticipated From Efforts Made by Manufacturers and Distributors Towards Closer Co-operation and Understanding

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 9, 1933—Marking time until "something happens," the Chicago paper market remains little changed this week over last. The most encouraging reports come not from actual business improvement but from a series of meetings held in this vicinity, all intended to materially improve the internal situation within the industry itself. From this standpoint, the low point of the current decline is having a wholesome effect and efforts at closer cooperation and understanding on the part of representatives of various lines should be of lasting benefit.

In the meantime buyers are discouraging any material acquisition of stock due primarily to their desire to keep inventories just as low as possible. Orders for quick shipment, necessary to fill an unforeseen demand here and there, are characteristic.

The fine paper market is said to be as quiet, if not more quiet, than at any time during the past year and the first of the year has, as yet, brought no appreciable quickening of demand. Prices are fairly steady. The kraft market is reported at about the same level of a week ago with the price range running not far from the twelve months low. Ground woods and news prints are both hesitant although, in the latter product, current reports indicate some new newspaper advertising campaigns which should later prove beneficial. Books and covers remain practically unchanged. Waste papers have been reported as slightly improved, in specific lines.

Tissue Makers and Jobbers Meet

Eleven manufacturers of interfold tissues, toilet papers, paper towels, etc., met with a committee from the Chicago Paper Association at the offices of the Hanchett Paper Company, on Wednesday, January 4, to discuss ways and means of improving the sale of such products in Chicago and vicinity. The committee from the Chicago Paper Association has long felt that there should be closer cooperation between manufacturers and jobbers in an effort to eliminate indiscriminate selling in this market. It is said that members were frequently confronted with instances where manufacturers had sold direct to janitor supply houses, basement stores, etc., in such a way as to be harmful to legitimate jobbers handling all lines of coarse paper. At the January 4 meeting the manufacturers listened to the committee's presentation of the situation and agreed to cooperate to the fullest extent in an effort to confine the sale of their merchandise to legitimate wholesale and jobbing houses.

The Chicago Paper Association was represented by Leo Altholz, Earl Beier, Jim Danehy, M. A. McNulty, D. F. Peck and J. D. H. Murphy. Representatives of the following manufacturers attended the session: A. P. W. Paper Co.; Continental Paper and Bag Mills Co.; Fort Howard Paper Company; Freeman Paper Company; Hoberg Paper and Fiber Co.; Morgan Paper Company; National Paper Products Company; Straubel Paper Company; Victoria Paper Mills. The meeting was held with the knowledge and sponsorship of the National Paper Trade Association and it is confidently expected that the friendly understanding reached by manufacturers and jobbers in this territory will have a rather widespread and wholesome effect on this type of business in general.

Inter Fold Tissue Men Confer

An informal meeting of inter fold tissue manufacturers, of the Tissue Paper Manufacturers Association, was held at the Congress Hotel, Chicago, on January 5 and 6, the manufacturers utilizing a part of the eleventh floor of the hotel for an informal session to discuss various problems confronting the industry. It is reported that some reference was made to the conference held on January 4 between manufacturers and a committee of executives from the Chicago Paper Association relative to a better understanding as to sales outlets in Chicago and vicinity. Arrangements for the Congress Hotel meeting were made by Herbert Thwaite, secretary of the association. L. G. Wood, Norton Paper Mills, and president of the association, was present to preside at the session.

General Waxed Papers Formed

General Waxed Papers, Inc., has been formed to acquire the properties of the Kelwax Division of the Kellogg Paper Products, Chicago. The new concern, which will manufacture and sell plain and printed waxed wrappers for food products, will have offices at 526 West 18th street, Chicago. Walter C. Hasserhorn is president. Other officers are: J. E. Richards, secretary and treasurer; John T. O'Connor, vice president in charge of sales; and Keith Kellogg, vice president in charge of advertising, service and designs.

Salesmen's Luncheons to Resume

The Salesmen's Association of the Paper Industry, Middle West Division, resumes its regular series of weekly meetings today, January 9. Discussion will undoubtedly center around the plans of the Paper Foundation, with Harold Knott representing the association on the board of governors, and on the topic of the annual get-together in New York during the American Paper and Pulp sessions February 13 to 16. The salesmen will hold a meeting in the morning of February 14 and its annual luncheon at noon of the same day. The speaker for this session has not as yet been announced.

Simplified Practice Recommendation

Simplified Practice Recommendation R19-28, covering asbestos paper and asbestos mill board, has been reaffirmed without change by the standing committee of the industry according to the Division of Simplified Practice of the Bureau of Standards. The recommendation has been instrumental in reducing the varieties, sizes, widths and thicknesses of asbestos paper from 72 to 20, and sizes and thicknesses of asbestos mill board from 21 to 4.

Campbell Paper Bag Co. Reduces Stock

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 8, 1933—Officials of the Campbell Paper Box Company of South Bend, Ind., have filed papers with the secretary of state here amending its incorporation papers to reduce the common capital stock to 750 shares each having a declared par value of $100.

Consolidated Declares Six Per Cent Dividend

Earnings of Wisconsin Rapids Organization Prove Sufficient to Maintain Usual Total Dividends On Capital Stock of Company—Action Made Possible by Diversified Products, Operating Economies and Aggressive Sales Policy

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., Jan. 9, 1933—Earnings of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., were sufficient in 1932 to declare total dividends on the capital stock of six per cent, according to announcement of the company. Stockholders received a dividend of one and one-half per cent on December 31 for the last quarter of 1932, completing the six per cent for the year. Diversified products, operating economies and an aggressive sales policy made this possible.

Superintendents Convention Preparations

Preparations have been begun at Green Bay, Wis., to entertain the annual convention of the American Pulp and Paper Mill Superintendents Association there in June. Robert L. Erminger, of Miamisburg, Ohio, national secretary, spent the last week end in the city conferring with the convention committee. Frank Timmerman, of the Northern Paper Mills, has been made general chairman of arrangements, and will be assisted by a number of superintendents in mills of Green Bay and vicinity. The invitation of Green Bay was accepted at the fall meeting of the executive committee of the association. Mr. Timmerman and A. D. Murphy, secretary of the Green Bay Association of Commerce, personally appeared before the committee on behalf of their city. A record crowd is anticipated at the meeting.

Bright Outlook for Whiting-Plover

Improved business in 1933 is anticipated by the Whiting-Plover Paper Company, Stevens Point, Wis. Preparations are being made under that supposition, according to E. A. Oberweiser, president. "An intensive advertising campaign, one of the greatest essentials in times like these, will be made in support of our confidence," he declared. There is sufficient evidence that the basis for recovery has been laid, but it will develop slowly, requiring cautious procedure, in the opinion of Mr. Oberweiser.

Flood Control Dispute Renewed

Paper mills and water power interests on the lower Fox River have another fight in the offing with riparians living on the upper Fox and Wolf Rivers, according to the outcome of the annual meeting of the Association for the Relief of High Water, held last week at Oshkosh, Wis. Alan H. Tripp, nemesis of the industries, was re-elected president. He obtained from those present at the meeting authority to ask the War Department to remove the flush boards from the dam at Neenah, Wis., where the level of the Lake Winnebago storage is controlled. It is claimed that the flush boards are illegal, but they were tolerated as long as the level of the dam was maintained at 15 inches above the crest.

This action is a vindictive move because the War Department refused to rescind an order obtained by water power users several years ago to maintain the level of the dam at 21¼ inches. The height was placed at that point to prevent serious water shortage during periods of drought, and also as a matter of sanitation. Removal of the flush boards is asked by March 1, 1933.

The association also is renewing its request to Congress for an appropriation of $6,000 to be used in formulating a flood control plan for the Fox and Wolf Rivers during the spring high water period. The aim of the riparians is to have storage reservoirs established on the upper streams so the water can be held under flowage control. The fund was asked last year as a part of the Garner relief bill, but a separate bill is to be introduced at the present session. The reservoir plan probably would to a great extent remedy the entire situation, since it is claimed that a deluge of rains under present conditions would inundate large areas before the present level of the dam is reached.

News of the Industry

Vast annual losses in Wisconsin from forest fires are being reduced by fire prevention and control activities of the federal forest service and the Wisconsin Conservation Commission. The latter body reports that the number of fires reported increased from 2,340 in 1931 to 3,168 in 1932. Due to increased vigilance, however, the total of burned area per fire was reduced from 274 to 40 acres, and the reported damage from $421,501 to $59,320. The total number of acres burned in 1931 was 640,979 and in 1932 it was 125,970.

The Lake States section of the Technical Association of the Pulp and Paper Industry, meeting on Tuesday evening of this week, was to have two speakers. Howard M. Cyr, chief of metallurgical research of the New Jersey Zinc Company, Palmerton, Pa., was to read a paper on "The Use of Zinc Pigments in the Paper Industry." The other paper was to be by J. H. DeMers, of the Taylor Instruments Companies, Rochester, N. Y., on "Temperature Control of Ground Wood Pulp Grinders."

Three paper mill executives were re-elected directors at the annual meeting of the First National Bank, Menasha, Wis. They are Frank B. Whiting, president of the George A. Whiting Paper Company; R. M. Sensenbrenner, of the same company; and Hugh Strange, of the John Strange Paper Company. John Stevens, Jr., was elected to succeed D. C. Everest, vice-president of the Marathon Paper Mills Company.

Stumpage Rates Lowered

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., January 9, 1933—The Lands and Forest Department of the Quebec Government has announced that in order to relieve unemployment the following lowered stumpage rates will be effective for this winter in the township reserves as well as for timber cut on leased lands: "White pine, elm, ash, basswood, birch, maple, tamarack, $1.50 per 1,000 feet board measure; spruce, balsam, grey pine, hemlock, white birch, aspen, poplar, cedar, $1 per 1,000 feet board measure; soft wood, 25 cents per cord of 128 cubic feet; hard wood, 50 cents per cord of 128 cubic feet.

From Hull it is reported that in the lower Ottawa Valley it is not likely that the reduced stumpage rates will have any effect, as it is too late in the season to get men into the bush. In the majority of places the cutting is now completed, and the lumber companies have commenced to haul the timber out.

Demand for Paper Listless in Philadelphia

While Evidence of Immediate Recovery of Activity, Following Holiday and Inventory Period, Is Lacking, Prevailing Situation Compares Favorably With Conditions At Beginning of 1932—Spirit of Competition More In Evidence

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 9, 1933—The business of the New Year has started—but without startling features so far at least as outward developments are concerned While, of course, the trade had always looked forward with expectancy toward the turn of the year, that expectancy is not concentrated on the very first business days of the year, and so the brief period during which 1933 can be written has brought with it no real disappointment. As a matter of fact business was listless, and while there was little if any evidence of an immediate renewal of activity, conditions now do not compare very unfavorably with those of a year ago.

Those with a contemplative turn of mind see very clearly outstanding, however, certain distinct trade trends, the most notable of which is insistent demand by consumers for lower prices even at the not so apparent cost of cheaper quality. The jobbing trade realizes, of course, that there is the mill point of view quite as much as the jobber's point of view, and it also realizes that there are on stock shelves of warehouses still a considerable quantity of high quality papers which cannot be moved at this time.

Mill representatives have heard in more than one place the suggestion made by jobbers that from their angle it would seem desirable to reduce prices on high grade products rather than to endeavor to introduce new brands at lower prices and of cheaper quality.

And furthermore where there is a very sharp competition to meet the demand for price concessions on the part of consumers, there is also appearing some competition on the part of jobbers to persuade to enter their services salesmen from other concerns whom they believe able to command trade. Some of these trade changes have already been noticed but there are well defined reports that the New Year will bring with it quite an additional number.

The spirit of competition is certainly more in evidence in the fine paper business of late 1932 and early 1933 than it was in the corresponding period of a year ago, but at its worst it is quiet compared to that which exists in the coarse paper division and in its allied products. Here, unfortunately, there is still dominant the determination to take orders regardless of price.

The paper stock market remains generally firm for all the better grades, but is soft for mixed and commons. At the close of the week old newspapers eased off a dollar a ton but it is thought that this reduction is merely temporary and any day may end. Firmness in prices of the better grades, unfortunately, is due rather to a small supply than to an increased demand and about on a parity with market conditions well cleaned up and with values stable.

Dill & Collins Acquisition

Announcement in the PAPER TRADE JOURNAL of the acquisition by the Mead Corporation of the old established plant of the Dill & Collins Company in this city, aroused interest in trade circles and though it came before the old year closed, will go down in annals in connection with the new year's development. At the office of Dill & Collins it was said that all future announcements would have to come from the Mead Corporation. In this connection some of the jobbers pointed out a special blue slip announcement, just received from a mill which has been taken over by another, quoting on a stock which was made prior to August, 1932, and at scaled down prices. The jobbers feel that when under such circumstances stock is dumped on the market it makes still harder any effort to carry out mill desire for promotional work on the part of the trade.

Paper House Returns to Old Quarters

But a real New Year's development lies in the important fact that with the close of the month the Paper House of Pennsylvania, for a number of years located in rented quarters at 32 North 6th street, will return to its own building which it occupied for a number of years after its construction at 28 and 30 North 6th street; this was its home for the decade from 1918 until 1928 at which time a lease of the first floor was made to the Paper Service Corporation. Upon the removal of the offices of the Paper Service Corporation to those of A. S. Datz & Son some time ago, the first floor became vacated, and now the Paper House of Philadelphia will return to its old home occuping on the first floor and the basement a larger square footage than in its present leased quarters. Its main warehousing stock will be carried, as heretofore, at Front and Federal streets, but the building at 28 and 30 North 6th street will give it increased facilities from prompter service. Norbert A. Considine is president and treasurer of the Paper House of Pennsylvania, and Charles F. Papst is vice president and secretary. The firm is selling agent for the Champion Coated Paper Company, of Hamilton, Ohio; Reading Paper Mills, Reading, Pa.; P. H. Glatfelter Company, Spring Grove, Pa., and Strathmore Paper Company, Mittineogue, Mass.

Paper Trade Association to Discuss Problems

The meeting of the Paper Trade Association of Philadelphia, which is to be held on this Wednesday in Dufor's, in the Bourse Building, is regarded as being one of trade importance, for, quite aside from the fact that officers are to be nominated for the ensuing year, is a discussion scheduled for facts regarding costs of warehousing delivery and other factors which enter into the overhead. With the New Year, the Association is hopeful of making progress in securing a larger activity in its deliberations by the coarse paper trade. The majority of the houses handling this line are members of the association or are in sympathy with it, but certain divisions—notably the Bag—are not as active as it is hoped they can be induced to become.

The present officers of the association whose terms are about to expire, will probably be renominated.

Issues New Iron Tag Sample Book

The Hollingsworth & Vose Company, manufacturers of rope and jute manila papers, of East Walpole, Mass., has just issued a new sample book showing several weights of the company's Iron Tag, No. 1 Jute, which will undoubtedly be of interest to the trade. Iron Tag is described as a superior jute paper where cleanliness, strength surface and folding qualities are essential requirements. These sample books are available on request.

Preliminary Work of the Paper Foundation

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 9, 1933—Within the next few days the entire paper industry, from coast to coast, will become thoroughly acquainted with the planned exhibit of the paper industry which is to feature, as far as paper is concerned, the Century of Progress Exposition in Chicago which opens June 1. Representatives of every branch of the industry will hear, at the American Paper and Pulp annual meetings in New York, February 13 to 16, a strong presentation of the project carried out by the Paper Foundation, Inc. Every part of the paper industry will be urged to bear its share of the very conservative financial burden in order that the cost, to supply houses, manufacturers, jobbers, converters and everyone, will be at a low minimum. Approximately $60,000 is to be raised within the next few months to finance this exhibit which, it is felt, will do more to establish the paper industry in its proper place among other industries than any undertaking the industry has ever taken under its wing.

Permanent Officers Elected

Strong testimony to the interest shown in the preliminary, and effective, work by the Paper Foundation under the management of Phil Howard, was in evidence when the entire board of governors, without exception, met in the Foundation offices on January 6, heard the report of preliminary work, began measures to incorporate as an Illinois corporation not for profit; elected permanent officers and outlined a basic plan of procedure which is outlined, in part, above. In recognition of his preliminary endeavors, Mr. Howard was elected president and general manager. The vice-presidency went to W. N. Gillett, representing the Western Paper Merchants' Association, while Harold Knott, representing the Salesmen's Association, fell heir to the important task of secretary-treasurer. The remaining four men, together with the officers, will form the Board of Directors of the Paper Foundation, Inc.

These are: Allen Abrams, Technical Association of the Paper and Pulp Industry; A. C. Gilbert, of the American Paper and Pulp Association; D. F. Peck, representing the Chicago Paper Association, and Fred C. Boyce of the American Pulp and Paper Mills Superintendents Association.

Plans Approved In Entirety

These men, constituting the board of directors, approved the preliminary plans in their entirety. They heard Mr. Howard report that the original expenses had been already underwritten by local executives and a few manufacturers who had heard inklings of the project, and that an initial payment had already been made to the Century of Progress. They heard that 2141 square feet of floor space in the Graphic Arts Building had been contracted for and that, even now, architects and designers were bidding for the work of fashioning the exhibit which is to sell millions of people on the products of the paper industry.

With time a vital element and confronted with the paramount necessity of solidifying all interests immediately, the Board gave Mr. Howard the signal to "go ahead." Already associations in all parts of the country are signifying their intention of working with the Foundation. The annual sessions of the American Pulp and Paper Association will hear a great deal about the project and, at that time, the directors feel the movement will have gone sufficiently far to completely crystallize sentiment and to underwrite the entire project. In the meantime, direct mail will be utilized to spread the story. Mr. Howard will be glad to speak before any and all associations and groups in the interests of the Foundation and only asks for an invitation that dates may be satisfactorily arranged. Even now a number of associations have had the privilege of hearing Mr. Howard explain the situation.

Financial Arrangements

In reporting the successful directors meeting Mr. Howard said that "here is the finest opportunity the industry has ever had to show the value of cooperative effort and to receive such value in return. It is time that we placed our industry on the pedestal that it deserves—very, very near the top among all industries. We are going to show millions the fundamentals of the paper industry—and sell paper while we are doing it. Financially, arrangements have been made so that if each will do his share proportionately, the cost to each will hardly be noticeable."

Boston Paper Market Quiet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., January 9, 1933 — Members of the wholesale paper trade experienced a quiet week, like the previous one, as far as actual business is concerned. Many dealers were completing their inventories, and concerns manufacturing paper as well as consumers were similiarly engaged. Some paper houses, however, received a fair amount of orders, considering conditions. Preparations for advertising campaigns, which, it is understood, are to be prosecuted with renewed energy this year, are being made, and all will require paper. Inquiries for fine paper were received in somewhat larger volume than before, at least in some cases, a fact which gives encouragement to dealers for future orders. With some large consumers of wrapping paper taking account of stock, the orders from these customers were negligible in quantity, although dealers continue to be hopeful for a good demand expected within a few weeks.

The box board market remains firm and in a favorable position for future business, although few orders were reported. In the paper stock market there is a more active demand for foreign gunny bagging. Domestic gunny bagging is being offered to southern consumers at 1.00 @ 1.10 delivered. For the last six weeks Southern buyers have been undecided what price to pay for foreign bagging, but have now concluded that the price is as low as it is going to be. The fact that the decline in foreign currencies has ceased has caused Southern buyers to come into the market and take what gunny was covered. With most of the consumers of paper stock still at work on their inventories, the week as a whole has been dull. Any changes in values have been in the nature of a decline.

In old papers, No. 1 soft white shavings range from 1.40 @ 1.60, compared with a recent quotation of 1.50 @ 1.65. No. 1 mixed shavings are down to .60 @ .70, from .75 @ .85, and No. 2 mixed to .40 @ .50, from .50 @ .55. No. 1 old manila has receded to .50 @ .60, compared with a former range of .55 @ .65; No. 1 kraft to .65 @ .75, compared with .70 @ .95, and corrugated boxes to flat .20, against a range of .20 @ .25. Other declines include miscellaneous old domestic rags, now at 1.50 @ 1.75, against 2.00 @ 2.25.

Progress Made in De-Inking of Papers

Several months ago, James Flett, the well known paper stock dealer, of 330 South Wells street, Chicago, Ill., made a contract with the Industrial Products Corporation, whereby for the life of the patents and extensions thereof, subject to certain volumes of business to be secured, he acquired from the corporation the sole and exclusive right to license paper mills to use the Snyder Process for de-inking papers, under the patents and patent applications owned by the Industrial Products Corporation.

The Snyder Process is a combination of mechanical and chemical operations and completely removes carbon ink from ground wood or free of ground wood papers. Describing the progress made in the de-inking of papers, Mr. Flett states:

"Tests have been made which show that the cost of manufacturing pulp in a book mill, from old books and magazines, free of groundwood, can be very substantially reduced under the present costs of de-inking the same material with the so-called soda ash and line process. Under the Snyder Process, cooking of book stock with soda ash, is entirely eliminated.

"Under the Snyder Process, newspapers printed with carbon ink or any ground wood papers printed with carbon ink or any combination of papers, some ground wood papers and some free of ground wood papers printed with carbon ink, can have the ink removed and a grade of pulp secured equivalent to the original raw material entering into the respective papers de-inked or the combination of same.

"The costs of de-inking under the Snyder Process are very low and including the royalty, waste paper can be de-inked for less than $5.00 per ton.

"It has proved practical, under the Snyder Process, to take mixed papers of certain grades and de-ink and decolorize same, converting the papers into a finished pulp of a quality equivalent to ground wood. The officials of a book mill in Kalamazoo, Mich. stated that the pulp product was of a quality far superior in brilliancy and color to the pulp manufactured under the process which they were using.

"It is our opinion that an extension of the use of de-inking papers under the Snyder Process, will furnish a very large additional market for waste paper which will re-establish waste paper as a profitable field of operation for the waste paper industry and will conserve to a very marked extent the inroads upon our natural resources of forests made necessary by the demands of the paper industry, as the use of the Snyder Process permits of the re-use for pulp purposes of the original ton of pulp produced from pulp wood as much as eight or nine times.

"The shrinkage from de-inking ground wood papers, exclusive of the clay or load in the sheet, has not exceeded 2 to 3 per cent."

International Pulp Declares Dividend

[FROM OUR REGULAR CORRESPONDENT]

GOUVERNEUR, N. Y., January 9, 1933—The International Pulp Company has announced the distribution to stockholders of the quarterly dividend of 1¾ per cent at a rate of 7 per cent per annum in following its usual custom. The company has paid dividends to stockholders for the past thirty years and indications are that the same policy will continue. Many of those holding stock are residents of this section. The company is among the most prominent producers of talc in the country and operated its mills steadily during the past year. Prospects for another year are said to be good.

The Paper Napkin Goes Modern

Paper napkins have always been just paper napkins. Today however, that is changed. Modern science has stepped into the picture and the lowly paper napkin takes on a new personality.

The National Paper Napkin Manufacturing Company of Chicago, who pioneered in the paper napkin field by producing the first folded paper napkins thirteen years ago, have invented and built a machine which treats the paper with powerful Ultra-Violet Rays and Ozone before it is converted into folded napkins. This machine also gives the paper a soft, linen-like texture, which makes it more absorbent and pleasant to use.

In addition to this powerful Sun-Ray treatment, purifying Ozone is blown through the paper. Outside air is piped to the machine where a powerful electric current splits the atoms apart and feeds them into the processing machine. This removes the lint and dust particles and gives the treated napkins the freshness and fragrance of clean mountain air.

Every Sun-Ray napkin carries the Sun-Ray trademark and the message, "For your health—treated with Ultra-Violet Rays and Ozone," pressed into the surface of the paper.

New dispensers for this napkin are furnished by the company at cost. These dispensers carry a colorful decalcomania on two sides, which attract the restaurant customers' attention and tell him the story of the Sun-Ray treatment.

Sun-Ray treatment is the first major improvement in paper napkins since the folded napkin came on the market and it has been welcomed enthusiastically by restaurant owners wherever it has been shown.

The National Paper Napkin Manufacturing Company at 1011-1025 S. California avenue will be pleased to send samples of this new processed napkin to all interested parties.

St. Regis Forestation Plans

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 9, 1933—Announcement is made of the transfer to the Syracuse branch of the Niagara Hudson Power Company of John E. Kieb, who for several years has served as chief forester for the St. Regis Paper Company and other Carlisle interests in this section. His connections with the company were brought about because of the interest in reforestation of the late John N. Carlisle and since taking over his duties millions of trees were planted under his direction.

Reforestation activities of the company have been reduced considerably and maintaining the established plantations is now the principal objective. It is understood that plans call for virtually no new planting projects during the year which resulted in the decision to move the forester. It is expected that Mr. Kieb will be employed for the time being in a department dealing with other than reforestation.

Roach Paper Co. Leases Quarters

LITTLE ROCK, Ark., January 9, 1933—The Roach Paper Company, 522 East Markham street, has leased the two-story brick building at 112-114 Bridge street, and will move into its new quarters after the building has been remodeled. Work of repairing the building will begin immediately. The location includes two stories, 35 by 140 feet of floor space with a full basement and adjoining trackage of the Missouri Pacific Lines.

Interest Grows in Packaging Show

How the depression has stimulated ingenuity of package design and originality in re-design will be shown at the Third Packaging, Packing and Shipping Exposition which will be held next March at the Hotel Pennsylvania, New York, according to reports from exhibitors which have been received at exposition headquarters. The national packaging show is being held in conjunction with a week's program devoted to packaging, packing and shipping technique, also to be held at the Pennsylvania under the auspices of the American Management Association.

Cartons, wrappers, bottles, tubes, boxes, literally by the thousands, will exemplify the vital importance of careful packaging in the business of today. Theft-proof, waterproof and air-tight packages, packages of paper, glass, wood, metal, plastic and transparent cellulose will be displayed by materials, package, container and packaging manufacturers, and those engaged in the development and provision of packing and shipping equipment and supplies. Exhibits will include counter display containers designed by leading advertisers, boxes which cannot be opened by any burglar's kit, displays of collapsible tubes, waxed paper and foils of every description.

The third national packaging show will embrace almost every industry and dramatize the packing and shipping of food of every description, bath salts, soap, erasers, rubber bands, toilet articles, lead pencils, shirts, hosiery, pipe tobacco, cigarettes, cigars, candy, optical goods, chewing gum and some hundreds of other commodities.

"The exhibits this year," according to John G. Goetz, managing director of the American Management Association, 225 West 34th street, New York, "will be particularly interesting and valuable in acquainting manufacturers and others interested in packaging with the wide range of wrapping materials, types of containers and designs and color combinations available for use which have proved successful either from the standpoint of attracting attention of consumers of goods to different sorts of packages, or for protecting the contents of the containers while in transit.

The display of the Cleveland Container Company will include paper tubes, spiral and lap wound used as thread protectors, packing devices, winding cores, radio and condenser tubes, dielectric tubes for electrical field, paper candles, window display tubes and for Zoo-A-Log sets, the new toy; also Nolap Abrasive Tubes, used by the dental trade for polishing teeth and instruments, foundry and polishing rooms; also paper cans for foods, drugs and semi-liquids; paper cans with tin ends; mailing tubes.

Robert Gair will exhibit corrugated board with colored liners used in shipping case construction, new types of cartons, display stands, shipping containers. All the exhibits will show the progress made in artistic and structural design.

Featured in the exhibit of the Liquid Carbonic Corporation will be an automatic rotary labeling machine with a capacity of 80 containers per minute, designed to handle automatically any labeling job on glass containers, including all-around labels and foil; also the national standard machine, hand-fed, with a capacity of 40 containers a minute, equipped for labeling flat or panel bottles, as well as round or oval bottles or jars.

The new adjustable F-9 model machine for wrapping packages will be displayed by the Package Machinery Company, and will be in motion part of each day during the Show.

Thomas M. Royal Company will show a line of cellophane bags for various products, including textile bags, bakery bags, "air-o-seal", bags for coffee, flour, candy and advertising; fancy cellophane shirt bags.

Stokes & Smith will exhibit various kinds of packages, containers, etc., filled and packaged on their packaging machinery, used for all kinds of food, grocery, drug and chemical products.

Sylvania Industrial Corporation will display the transparent cellulose product, "Sylphrap" in rolls and sheets, with booklets, leaflets and advertising material containing full descriptive information.

The display of the Waterbury Paper Box Company will feature the new "Metalon" process box now on the market; also other fancy set-up paper boxes used for cosmetics, playing cards, watches, stationery and candy.

Boston Paper Trade Happenings

BOSTON, Mass., January 9, 1933—It is expected that Arthur Chamberlain, secretary of the National Paper Trade Association, will be the speaker at the annual meeting and election of officers of the New England Paper Merchants Association, to be held at the Boston City Club, January 19. Mr. Chamberlain will discuss association matters.

The Spaulding & Tewksbury Company, box board dealers, have removed from 232 Summer street to the second floor at 222 Summer street.

Offices of Carter, Rice & Co., Corp., on the second floor of the company's building at 250 Devonshire street, have been re-arranged in a more desirable form. Partitions have been removed.

A sales meeting of Storrs & Bement Company was held Saturday morning. John H. Brewer, general manager, presided.

Ernest C. Calkin, who has been in the building at 176 Federal street 23 years, has removed to Room 518 at the same address. Mr. Calkin has been appointed a distributor of the Ames Thickness Gauge, made by the B. C. Ames Company, Waltham, Mass., a new product, which has been patented. This is an added line to Mr. Calkin's distribution of mill wrappers, box boards, chip boards, padding felt, solid fiber and pasted boards, made by the Oswego Falls Corporation and the National Waterproofing line of waterproofings, asphalt line of cast linings, waterproof wrappers and oil papers.

Foxboro Explains the Stabilog

An unusual presentation of one of the unusual engineering developments of the year that briefly is the story of Foxboro Bulletin No. 175. In thirty-two well illustrated pages, the theory and operation of the Stabilog System of automatic control is ably described.

Careful study of this bulletin will enable one to appreciate and understand more fully the complete subject of automatic instrument control. An impartial comparison of batch process and continuous process control and of the various types of control systems now in use is one of the interesting and educational features of the Stabilog Bulletin.

Simple, everyday analogies give the reader a readily understandable explanation of Stabilog action and operation. These analogies tell not only what it is, but also what it does! Mechanical construction and details are dealt with completely yet briefly. An interior view of a Temperature Stabilog shows the simple arrangement of the units inside of a compact round form instrument case.

Separate sections are devoted to descriptions of the applications of the Stabilog to temperature, pressure, liquid level and flow control. One of the pages of this section shows a magnified section of an actual record that shows graphically the action of the Stabilog.

Engineers and executives may obtain a copy of Bulletin 175 by writing to the Foxboro Company of Foxboro, Mass.

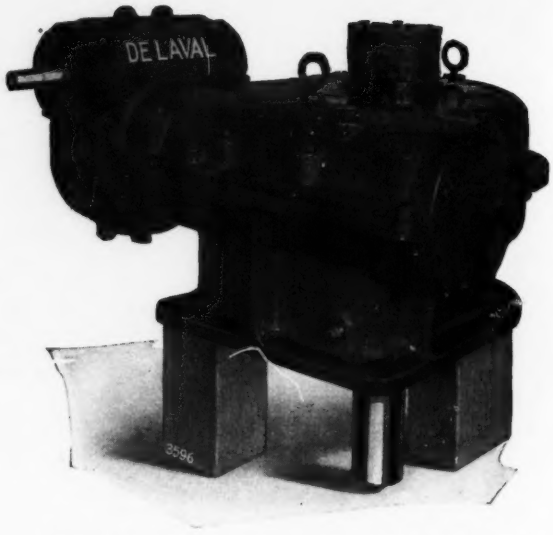
Worm Gears for High Speed Ratios

The worm reduction gear has in recent years been adopted widely for all uses where slow or medium speed machinery is driven by high speed motors or turbines, particularly for continuous operation under adverse conditions of moist or grity atmosphere and infrequent attention, and where compactness, silence and freedom from danger are controlling requirements. Single reduction gears of this type are successfully used for all ratios from 4 to 1 up to 100 to 1, and over a wide range of ratios the efficiencies of the best designs approach closely to those of spur and helical gears. Where higher ratios of speed transformation are required, two worm gears can be connected in series, and commonly both sets of gears have been enclosed in one housing. With the high speed worm wheel mounted directly upon the slow speed worm shaft, only three moving parts, except for bearings, are required for transformation ratios up to about 8000 to 1.

In the new line of double reduction worm gears illustrated by the accompanying photographs and produced by the De Laval Steam Turbine Company, Trenton, N. J., the simplicity of the combined double reduction design has been retained, the high speed gear wheel being mounted upon the slow speed worm shaft, but a greater flexibility in the arrangement of the drive has been gained by using separate housings for the high speed gear and the slow speed gear. For example, the unit with vertical slow speed shaft can be combined in six ways, namely: with the high speed shaft at the right and with the vertical driven shaft extending either upward or downward, or in both directions, and similarly with the high speed shaft at the left. The unit with horizontal slow speed shaft, can have the high speed driving shaft extended in either or both directions, and likewise the slow speed shaft. The worm may be rotated either clockwise or counter-clockwise, facing the worm from the motor or driving position. Standard gear sets are cut with right-hand threads.

All gear tooth and worm surfaces and the bearings are lubricated by a splash system, the high speed gear wheel and the slow speed worm dipping in an oil bath in the casing. Practically the only attention required is to see that the proper oil level is maintained. The high speed worm shaft and the shaft which carries the high speed gear wheel and the slow speed worm have ball bearings. The slow speed shaft, which in double reduction gears may be called upon to carry considerable forces, has plain sleeve bearings, or, in units in which the slow speed shaft is horizontal, may be fitted with tapered roller bearings.

DOUBLE REDUCTION WORM GEAR WITH SLOW SPEED SHAFT HORIZONTAL



DOUBLE REDUCTION WORM GEAR WITH SLOW SPEED SHAFT VERTICAL

Paper Rejections by Government

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 11, 1933—George H. Carter, Public Printer in his annual report to Congress had the following to say in connection with paper and envelope rejections during the past year. He said:

Rejections of paper amounted to 4,171,164 pounds, or 8.8 per cent of the total delivery of 47,132,350 pounds during the fiscal year 1932. The principal cause of these rejections was dirt, for which 1,623,918 pounds of paper were rejected or accepted at a penalty discount. Lack of opacity was the next chief cause for paper rejections during the year.

Envelope rejections totaled 3,803,225, or 7.9 per cent of the total purchases of 48,350,202 envelopes during the fiscal year. Deficiency in folding endurance was the chief cause for envelope rejection. One rejected delivery contained a mixture of ground wood and sulphite pulp instead of the specified kraft.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 11, 1933—The Government Printing Office has received the following bids for 40,000 pounds of chip board: Bartgis Brothers Company, $27.50 per ton less 1 per cent; Consolidated Paper Company, $30 less 1 per cent; Old Dominion Paper Company, $27.32; R. P. Andrews Paper Company, $26.95; Barton, Duer & Koch Paper Company, $26.60; Virginia Paper Company, $21.25; Whitaker Paper Company, $26.32; Walker Goulard Plehn Company, $26.69 less 1 per cent; Mathers-Lamm Paper Company, $27.95; Reese & Reese, Inc., $27; Lindemeyr Paper Company, $27.50; and Milton Bradley Company, $26.80.

Obituary

Thomas Harry Casey

BOSTON, Mass., January 9, 1933—Members of the paper trade as well as all other friends were deeply grieved to learn of the death of Thomas Harry Casey, head of the Casey-Bigley Company, dealers in paper and twine, and for eighteen years treasurer of the Boston Paper Trade Association. He was widely known and highly respected. Mr. Casey, who was 71, died December 31, after a few weeks' illness, at his residence, 168 Lexington avenue, Cambridge, Mass.

He was born in Cambridge, the son of Mr. and Mrs. Thomas J. Casey. His father, for a number of years, was chief of the Cambridge Fire Department. After his education in the schools of that city, he began his career in the paper trade 52 years ago as errand boy for E. H. Haskell, Boston. Subsequently he became a member of the sales department of that concern and a few years later, together with W. J. Bigley, bought the Haskell business.

While he was with E. H. Haskell and later for his own firm, he built up an extensive trade with the Chinese of Boston and New England. He was held in warm regard by members of that race. A sign in the Chinese language can be seen at the entrance of the Casey-Bigley establishment at 11 Otis street.

In connection with the observance of his fiftieth anniversary in the business, a group of friends in the trade gave him an informal dinner and presented him with a gold pencil, appropriately inscribed. At the March meeting of the Boston Paper Trade Association at the Algonquin Club in 1931, Mr. Casey was presented with a silver pitcher and a bouquet of flowers sent to Mrs. Casey. At the funeral, held at the Sacred Heart Church, Watertown, Mass., the paper trade was well represented.

Mr. Casey is survived by a widow, Elizabeth T. Casey; a daughter, Mrs. F. W. Murphy, of New York, and two sons, Herbert J., of Watertown, and T. Charles, of Cambridge, both of whom were associated with him in the Casey-Bigley Company. He was the father-in-law of Earl Sande, the famous jockey, whose wife died five years ago.

The business of the company will be carried on under the same name and under the management of T. Charles Casey.

Richard W. Daley

BOSTON, Mass., January 9, 1933—Richard W. Daley, for ten years a salesman for John S. Cheever Company, 44 Farnsworth street, Boston, died recently at his residence, Winthrop, Mass. Mr. Daley was previously with John Carter & Co., Inc. He covered the Boston territory and was very well known and liked in the trade. A wife and several children are living.

George W. Hamersley

George W. Hamersley, secretary and treasurer of the Hamersley Manufacturing Company, paper makers, of Garfield, N. J., died at his home in New York City, on Saturday, December 31. He had been connected with the Hamersley Manufacturing Company all of his business life of over thirty-six years.

Mr. Hamersley was a member of a number of musical and other clubs in New York City and Passaic, and was an accomplished violinist.

He is survived by his widow, Clara W. Hamersley; his mother, Mrs. Mathilda Hamersley; his son, Arnold G. Hamersley, and his brother, Carl S. Hamersley. His son, Arnold G. Hamersley, represents the company in Philadelphia. His brother, Carl S. Hamersley, is president of the Hamersley Manufacturing Company.

Albert Evers

CINCINNATI, Ohio, January 9, 1933—Albert Evers, vice-president of the Diem & Wing Paper Company, Gilbert Avenue Viaduct, this city, passed away on January 5 after a sudden heart attack. Mr. Evers had been with the Diem & Wing Paper Company for a period of forty-five years, and had traveled the Columbus and Cleveland territory.

Philadelphia Trade Notes

The Garrett-Buchanan Company announces that it has taken on the agency for the line of Ohio covers made by the Beckett Paper Company. This is a line of low-priced goods—at 11 cents—and comes in eleven colors and in white. Advent of the Beckett company into this field of low priced products is looked upon as an interesting innovation.

Morgan H. Thomas, president of the Garrett-Buchanan Company, accompanied by Mrs. Thomas, will leave the city early next month for a sojourn of several weeks in Florida.

Leo Edwards, formerly of the D. L. Ward Company, has been added to the sales organization of the Garrett-Buchanan Company and will contact consumers of wrappings and specialties like gummed tape, twine and allied lines.

The meeting of the Philadelphia Paper and Bag Institute, scheduled for last Wednesday, has been postponed for a week because of other activities of members, and it is hoped that final plans for their first banquet can be announced; the present thought, however, is that it may be necessary to postpone this event from the first of March, as originally tentatively favored.

There will be a meeting on next Tuesday of the Credit Association of the Philadelphia Paper Trade. They report collections of $6,500 during the month of December and upward of 800 credit calls.

Forecasts the 30-Hour Week

After asserting that technocracy failed, like "most of the other heavens of man's imagination," to show how to get there, Edward A. Filene, Boston merchant, declared in an address Monday night in the McMillin Academic Theatre at Columbia University that a second industrial revolution would change the factory system in the United States. He predicted a universal six-hour day, the five-day week and high pay.

"The six-hour day and the five-day week have now become not only practicable but urgent," said Mr. Filene. "I am speaking of the business necessity of more leisure for the masses as a stabilizer of business progress.

"The factory system as we know it seems doomed to disappear. As mass production is perfected, there will be little need for dividing such countries as the United States into agricultural and urban sections. Cities will go to the country. The country will come to the city. The movement has already begun. It was made possible and even inevitable by the coming of giant power."

Mr. Filene suggested that man was essentially selfish, and that it was his selfishness that stimulated him to profitable effort, adding, "If we were not naturally very selfish creatures the outlook would indeed be black."

Mass distribution will be developed to take care of mass production, according to his forecast.

New York Trade Jottings

D. C. Everest, vice-president and general manager of the Marathon Paper Mills Company, of Rothschild, Wis., is a prominent New York visitor this week.

* * *

C. M. Baker, engineer of the American Paper and Pulp Association, is spending several days at headquarters, 370 Lexington Avenue, New York, this week.

* * *

Edward S. Dunbar, of the Crocker-McElwain Paper Company, has been elected a board member of the Direct Mail Advertising Association, New York.

* * *

Dr. Charles H. Herty, research chemist in charge of the Division of Pulp and Paper Research of the Department of Forestry and Geological Research, at Savannah, Georgia, is spending several days in New York.

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Japan Paper Company, with offices in New York, Boston and Philadelphia, is sending out beautifully printed and illustrated pamphlets, showing Papier de Rives, mould made in France; and Halle and Leipsic Nr. 1509, mould made in Germany.

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P. M. Loddengaard, for the past year waste paper buyer for a group of board mills in the East, who discontinued such operations on January 1, has recently joined the purchasing department of the Robert Gair Company, New York.

* * *

Harris Goldman Company, paper mill supply dealers, have removed their offices from 53 Pike street to 38 Park Row, New York, where the telephone numbers are: Barclay 7-1385 and 7-1386. The packing plant will be continued at Pike street.

* * *

Alling & Cory Company, Inc., distributors of S. D. Warren, Strathmore, Linweave, Linton, Hammermill, Beckett, Ticonderoga, Esleeck, Falulah and Fairbanks Imported papers, announce their removal to larger quarters at 133-141 West 21st street, New York.

The new telephone number is Chelsea 3-6030.

* * *

There was a good attendance at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, which was held on Monday last at the Hotel Roosevelt, New York. John Cornell, of the *Paper Mill,* who was the guest speaker, gave an interesting and informative address on "Technocracy", which was deeply appreciated by those present.

A spirited discussion followed.

* * *

In outlining their program for the forthcoming year the Direct Mail Advertising Association states that more efficient direct mail means more prolific direct mail—thus benefiting the hundreds of different trades affiliated with direct mail from paper mill to printer. Among the plans being developed are a series of surveys among manufacturers, wholesalers, retailers, publishers, broadcasting stations and service companies as to their relative use of direct mail. A speaker service is also part of the plans which will be available for the use of program chairmen of all trade groups for luncheons or other classes of meetings.

Richard M. Connolly Dead

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 9, 1933—Richard M. Connolly, widely known in the paper trade, who, as a boy entered the employ of Kutroff & Pickhardt, and for the last twenty-five years has been associated with the American Dyewood Company, died on Thursday at his home 1 Wellington Road, Stonehurst, after an illness of almost a year. Mr. Connolly was widely known to the older generation of paper mill men whom he visited as a representative of his old connection. He was a fourth degree member of the Philadelphia Council, Knights of Columbus, and also a member of the Friendly Sons of St. Patrick. He is survived by his wife, Mrs. Sarah C. Connolly, nee Miss Sarah Lamorelle; three sons, the Rev. Paul A. Connolly, Richard M. Connolly, Jr., and Joseph A. Connolly; and two daughters, Mrs. John A. Duffy and Mrs. Harry E. Keefrider.

A. T. Miller Leaves Cleveland Paper Co.

A. T. Miller, for the past two years sales and promotion manager of the Cleveland Paper Company, Cleveland, Ohio, announces his resignation, effective January 15. Mr. Miller came to the Cleveland Paper Company in the capacity of promotion manager. Later he was also promoted to salesmanager, and during the past year has combined these two duties.

During his connection with the Cleveland Paper Company, Mr. Miller became well known to many mill representatives and especially those engaged in promotion work, in which work he was greatly interested. Though Mr. Miller has not announced his plans for the future, it is believed he will continue to be identified with the paper industry.

His many years experience in merchandising and sales supervision qualify him in an unusual capacity.

Mr. Whiting an Honorary Pallbearer

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., January 10, 1933—William F. Whiting, president of the Whiting Paper Company was one of the honorary pallbearers at the funeral of ex-President Calvin Coolidge at Northampton, Saturday. Mr. Whiting served under the late president as Secretary of the United States Chamber of Commerce for one year.

The story goes, which is neither confirmed nor denied by Mr. Whiting himself, that Whiting enjoyed his work and would have liked to continue in it.

He went and asked President Coolidge about it.

"William," the president is said to have remarked, "you had better pack your bags and get home as fast as you can. There is going to be the dickens to pay the next few years."

Perkin Medal Award

The Perkin Medal of the Society of Chemical Industry was awarded on January 6, 1933 to George Oenslager of the B. F. Goodrich Rubber Company, Akron, Ohio, in the Electrical Institute Auditorium, Grand Central Palace, New York, N. Y.

The award was made to Dr. Oenslager for the pioneer work done by him in the development of organic accelerators for rubber vulcanization. Dr. Oenslager was formerly a research chemist in the pulp and paper industry and was employed by S. D. Warren Company, Cimberland Mills, Maine.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Memphis, Tenn.—The Southern Central Company, recently organized by J. T. Roach, 522 East Markham street, Little Rock, Ark., and associates, is planning early establishment of a new paper converting plant at Memphis, for the manufacture of writing tablets and kindred paper specialties. It is understood that company will lease existing industrial building, and remodel and equip. Initial plant is reported to cost over $50,000, with machinery. R. S. Bull, 333 South Desplaines street, Chicago, Ill., is interested in the new company.

Marshallton, Del.—The Continental Diamond Fibre Company, Newark, Del., has work under way on extensions and improvements in former Rupert mill of the Delaware Hard Fibre Company, near Marshallton, and plans to occupy the property at early date for the manufacture of a new fiber product, known as "Haveg." It is expected to develop sizable output at the plant. Operations will be maintained at Newark mill, as heretofore.

Philadelphia, Pa.—The plant of Henry Schmidt & Bro., Inc., 328 Vine street, manufacturer of paper boxes and containers, was slightly damaged by fire on January 4, caused by heavy fire in four-story building on adjoining site. Estimate of loss to Schmidt plant has not been announced. The damage will be replaced.

Elizabeth, N. J.—The Continental Paper and Bag Corporation, 220 East 42nd street, New York, N. Y., a division of the International Paper Company, New York, has concluded arrangements for lease of space in the Terminal Building, Newark and North avenues, Elizabeth, formerly the plant of the Durant Motor Company. The lease covers the second floor of a two-story section of the terminal, totaling about 60,000 square feet of space, and will be occupied at once for a new plant unit. Company will remove its works from Bush Terminal, foot of 51st street, Brooklyn, N. Y., to new location, and is understood to be planning for increased operations at the new place. It is expected to begin production late in January.

Melrose, Mass.—Following recent purchase of three factory buildings at Melrose by the Hersey Paper Company, Medford, Mass., previously referred to in these columns, a new company has been chartered under name of the Hersey Paper Lining Company, with capital of 250 shares of preferred stock and 400 shares of common stock, no par value, to take over the property. The buildings, on Pleasant street, were formerly used by the Boston Rubber Shoe Company, and total about 30,000 square feet of floor space. The Hersey company will occupy at once the new plant for manufacture of a special line of paper goods. Thayer F. Hersey is president of the new company, and Waldon B. Hersey, 29 Woodside road, Winchester, Mass., treasurer.

Hoboken, N. J.—The Karl Voss Corporation has been organized by Karl Voss and associates, with capital of 100 shares of stock, no par value, to take over and operate the company of same name, with local plant at 1500 Hudson boulevard, manufacturer of paper boxes and containers of various kinds. John Moore, Hoboken, is interested in the new company.

Memphis, Tenn.—The local factory of the Chase Bag Company and adjoining property on Trigg avenue, near Riverside boulevard, has been purchased by the Continental Can Company, Inc., 1 Pershing Square, New York, N. Y., and will be occupied by purchasing company for another line of manufacture at early date. The Chase company disposed of the property for a reported consideration of $78,000.

New York, N. Y.—The Robert Gair Company, 420 Lexington avenue, manufacturer of paperboard products, has formed three major divisions to carry out company production in different lines at its various plants. These divisions will be known as the Boxboard Division, Folding Carton Division, and Container Division, respectively. In addition to manufacture, the three new divisions will function for sales and other operations.

South Bend, Ind.—The Stephenson Corporation, recently organized with capital of $100,000, is said to be planning early operation of a local plant for the manufacture of a line of fiber products and fibrous materials. The new company is headed by Don K., George M. and J. Albert Stephenson, all of South Bend.

Pittsburgh, Pa.—Fire, December 30, damaged the storage and distributing plant of the Klaman Paper Company, 2021 Forbes street. The official estimate of loss has not been announced, but is reported as slight. The damage will be replaced.

Wilmington, Del.—There have been some sizable arrivals of wood pulp from Baltic points at the local Marine Terminal recently, for use by paper mill interests in this section. A cargo of about 2000 tons of such material was discharged early in January by the steamship "Wanja."

London, England—British Sidac, Ltd., 8 Fredericks place, London, recently organized by G. W. Treadwell, 46 Jerningham road, S.E., and associates, is planning operation of a plant for the production of a line of wrapping papers made from cellulose or acetate. It is understood that company will manufacture under the process of the Societe Industrielle de la Cellulose, Paris, France.

East Greenwich, R. I.—The Boston Wire Stitcher Company, East Greenwich, has concluded negotiations for the purchase of the plant and assets of the Bliss-Latham Corporation, Erie avenue, Niagara Falls, N. Y., manufacturer of paper box-making machinery and allied equipment. The purchasing company is planning early removal

of the plant to its main works at East Greenwich, where production of the Bliss-Latham line will be concentrated in the future. It is understood that such equipment will be sold in the future by the Dexter Folder Company, 28 West Twenty-third street, New York, N. Y. H. R. Bliss and G. Prescott Fuller, heretofore executives of the Bliss-Latham organization, have become connected with the last noted company.

New Companies

New York, N. Y.—Paper Affiliates, Inc., has been incorporated with a capital of $20,000, to manufacture and deal in paper products of various kinds. The incorporators include Marcus and Edwin G. Straus, 277 West End avenue, New York.

Chicago, Ill.—Hork Sanitary Bag Company, 1001 West North avenue, has been incorporated with a nominal capital of $5,000, to manufacture and deal in paper bags and containers. The incorporators include Nathaniel Cohen and Samuel Dry.

Waterbury, Conn.—The Kampner Wall Paper Company has been incorporated with a capital of $50,000, to manufacture and deal in wall papers and kindred paper stocks. The incorporators are M. Kampner and A. E. Ciminera, both of Waterbury.

Pomona, Cal.—The Fernstrom Paper Company has filed notice of company organization to deal in paper and pulp products. Erik Fernstrom, 1140 East Holt avenue, Pomona, is head.

New York, N. Y.—The Globe Paper and Twine Company, Inc., has been incorporated with capital of $10,000, to deal in paper products, wrapping papers, etc. The incorporators are Jacob Solomon, 1274 Fifth avenue; and Herman Solomon, 946 Sherman avenue, Bronx, N. Y.

Indianapolis Looks for Improvement

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 9, 1933—In spite of a general dullness in business following the holiday period, the trade is looking forward to a better year than 1932. At that the volume of business done during the past year was not as bad as it might have been and there are some encouraging features for the new year. There have been some inquiries from new sources and while the orders have not materialized, it is believed that with general low costs buying will react more readily to any improved tone than it did last year.

The local trade passed the first of the year with perhaps the lowest inventories on record. This means that any improvement in demand will be reflected at the mills almost immediately. In kraft, it is believed that with prices holding at about the levels set some weeks ago, there is a basis for buying that can not be denied. Fine papers show little change. There is a cautiousness concerning contracts that is somewhat worrisome, but it will pass it is believed.

Just now the newspapers are most concerned with the attitude of the large national advertisers. If they continue their 1932 schedules, and there are many who believe this will be done and in some cases schedules will be increased, then the consumption of news print in Indiana should be larger than last year. This will be particularly true if the smaller local advertisers get any reaction at all, for they have been out of the market to a large extent and the papers have depended heavily on the national advertisers for their business.

The container field is counting heavily on new business during the coming year. At that the container factories in this state have not suffered proportionately with the remainder of the industry during the past year.

R. S. Hatch Goes With Weyerhaeuser

As a result of a recent decision by the directors of Weyerhaeuser Timber Company to establish a research department, R. B. Wolf, manager of the Pulp Division of Weyerhaeuser Timber Company, at Longview, Wash., has been commissioned to build the foundation of such a department at Longview. The aim of the research department will be to study problems dealing with the conversion of wood into marketable products, the development of special fiber qualities to meet the specific needs of the paper and other pulp consuming industries, and the conversion of mill waste into useful products.

R. S. Hatch, a well known technical man in the pulp and paper industry, has been chosen by Mr. Wolf to head the new department, and will immediately take up his new duties at Longview.

For the past five years Mr. Hatch has had charge of technical development of Pulp Bleaching Corporation and has had much to do with the perfection of the chlorination bleaching process, so successfully introduced by that company.

Mr. Hatch brings to his new position a wide experience in the technical and operating fields of the industry, as well as valuable experience in the manufacture of fine organic chemical products and dyestuffs.

Mr. Hatch was trained as a chemical engineer and specialized in the field of organic chemistry. He spent several years as research chemist and plant manager in the production of synthetic perfumes, medicinal products and dyestuffs. In 1912 Mr. Hatch became chief chemist of Crocker McElwain Company and shortly thereafter was promoted to the position of general superintendent. During this period, Mr. Hatch was responsible for laying the foundation for testing methods for the evaluation of wood pulp as a paper making raw material. In addition to his knowledge of fine papers, he is thoroughly familiar with the requirements of the better grade wrapping manufacturers, having been in charge of the manufacture of waxing and grease-proof papers at the Hamersley Manufacturing Company for about five years.

Mr. Hatch is one of the original members of the Technical Association of the Pulp and Paper Industry, is a past president of the association and has been actively identified with its work for many years. He has served on a number of the association's committees and has a wide circle of friends in the industry, both in this country and in Canada.

Beaver Falls Operating Power

[FROM OUR REGULAR CORRESPONDENT]

BEAVER FALLS, N. Y., January 11, 1933—Paper mills in this section are bearing a considerable portion for the assessments in Lewis County in connection with the construction of storage reservoirs. The levy to be collected now amounts to $51,084.40. Manufacturing plants are assessed as follows: J. P. Lewis Company, $1,051.45; Lewis, Slocum & LeFevre, $2,048.12; Gould Paper Company, $401.84 and $1,146.87; Moyer & Pratt Company, $230.21; J. P. Lewis Company, $1,399.47; Beaver River Power Company, $7,020.46; Northern New York Utilities, $16,965.26 and $9,056.24.

The reservoirs were constructed mainly to provide increased operating power for industries and have already proved of great aid during drought periods. Plants are now able to be kept running during all seasons of the year and the difficulties of low water have been virtually eliminated.

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BEARINGS GUARANTEED FOR 5 YEARS

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COMING EVENTS

AMERICAN PAPER AND PULP ASSOCIATION, Fifty-Sixth Annual Convention and Meeting, Pennsylvania Hotel, New York, February 13-16. Luncheon, Thursday, February 16.

NATIONAL PAPER TRADE ASSOCIATION OF THE UNITED STATES, Convention, Pennsylvania Hotel, New York, February 13-15. Luncheon, Wednesday, February 15.

TECHNICAL ASSOCIATION OF THE PAPER INDUSTRY, Convention, Pennsylvania Hotel, New York, February 13-16. Luncheons, Wednesday, February 15 and Thursday, February 16.

SALESMEN'S ASSOCIATION OF THE PAPER INDUSTRY, Annual Meeting, Pennsylvania Hotel, New York, Tuesday, February 14. Luncheon, Tuesday, February 14.

NEW YORK ASSOCIATION OF DEALERS IN PAPER MILLS' SUPPLIES, Annual Banquet, Hotel Commodore, New York, Wednesday, February 14.

CANADIAN PULP AND PAPER ASSOCIATION, Annual Meeting, Montreal, January 25-27.

CALVIN COOLIDGE

The PAPER TRADE JOURNAL, together with all the nation, mourns the loss of former President Coolige last week. Because of no intimation of serious ill health and because of his comparatively young years, the news on Thursday afternoon of his death came as a bewildering shock. No former chief executive of the nation is now alive. Undoubtedly the exactions of this high office take a toll which passes common understanding. The rise of Mr. Coolidge from an obscure lawyer in New England through some score of public offices to the highest political preferment possible reads like a romance. He remained modest and unaffected through all these stages of advancement. Perhaps this was his greatest charm. It certainly did much to win the respect for him that at his death was universal. The country has lost a good and a great man. His prestige will increase as time goes along.

PULP AND PAPER IN 1932

In a resumé of conditions in the pulp and paper industry for the past year, Mr. S. L. Willson, president of the American Writing Paper Company and president of the American Paper and Pulp Association, estimates that the industry is operating at the present time at about 50 per cent of capacity. This is a vastly more favorable showing than is being made at present by the other representative industries of the country, including steel, textiles, automobiles, etc., and obviously indicates that when the general improvement in business occurs, it will be reflected early and substantially in the paper field. The conditions of the past several years, Mr. Willson intimates, have brought numerous trade abuses and the correction of these must be sought as soon as possible. This demands the cooperation of the whole industry and this cooperation should be freely accorded.

Mr. Willson enumerates the high lights in the experiences of the past year in the pulp and paper industry as follows:

"The decline in the domestic production of pulp and paper which began in 1931, continued until July 1932 when a low level was apparently reached. In the latter half of the year the production trends remained practically level, although some grades gave indications of rising. Withal, however, the industry is operating at about 50 per cent of capacity.

"In the first half of 1932 price levels changed but little. In the latter half, however, substantial reductions occurred in practically all grades, bringing prices as a whole to levels that are materially below those of 1913. Although the downward movement was apparently checked at the end of the year, immediate reversal does not seem likely until the volume of sales increases.

"In the competitive selling of paper, which has been the most intense that the industry has ever experienced, there has been a marked breakdown in trade practices and customs in many grades that has added to the chaotic condition of the market. The destructive character of the abrogation of trade customs is being recognized, and some groups of manufacturers are undertaking cooperative efforts to re-establish the uniform fundamentals of marketing.

"The wood pulp industry has undergone a more marked deflation than has paper manufacture, because of the unsettled conditions in international trade. Importations of chemical pulps have been maintained at near former levels, but the domestic consumption has fallen off in harmony with the decline in paper use. The result has been manifested in a sharp reduction in the sales of domestically produced pulp. Furthermore, many mills which normally manufactured their own pulp requirements have switched to foreign pulp.

"Moreover, the industry views with apprehension the sale of foreign-made paper at below-market prices. Heretofore, the volume of these sales has not been important, but the low prices that are being quoted have exerted a strong influence upon domestic prices. This condition is due chiefly to depreciated currency competition.

"The industry as a whole is going through a period of drastic cost reduction, probably the most severe test that it has ever experienced. Costs of materials other than wood pulp have been reduced and the costs of pulpwood have decreased in some instances to lower levels than have existed since the beginning of the century. There has been

a general reduction in wage rates throughout the industry, but these reductions have been in most cases not more than 15 per cent.

"The industry does not look for an immediate upturn of important proportions. Operations are being planned on the basis of a gradual increase in business over a relatively long period, in which increase in volume of sales must precede higher prices. In the meantime, every effort must be made to protect the industry's resources and its market outlets. This is beyond the means of the individual manufacturer; it is an industry job in which all must participate."

Soviet Russia Stops Importing Paper

Soviet Russia has ceased importing paper notwithstanding the inability of local mills to fully meet the domestic demand, according to a report from Minister R. P. Skinner, Riga, Latvia, made public by the Commerce Department.

There has been a gradual decrease in paper imports from 147,000 metric tons in the fiscal year 1925-26 to 26,000 tons in the calendar year 1931, Mr. Skinner's report states, based on Soviet official figures. This year, to October 1, only 105 tons of paper had been imported.

Soviet Russia's progress in the production of paper during the past few years remains behind provisions of the Five Years' Plan. The Plan for 1931 provided for the production of 611,000 metric tons of paper, including 154,000 tons of newsprint, 105,000 tons of other printing papers and 95,000 tons of writing paper. Only 497,000 tons of paper, including 294,000 tons of news print, other printing and writing papers were produced.

Even if the Soviet paper industry should fulfill its production plans, it could satisfy the demands only to the extent of 60 per cent. Labor difficulties, shortage of wood pulp and other semi-raw materials and poor organization of work in the mills are mentioned in the Soviet press as the main causes for the failure to keep up to schedule.

Thompson & Norris Division to Move

The Hinde & Dauch Paper Company, Sandusky, Ohio, has sent out the following announcement: "It is well known that under the stress of present conditions, the spread between sales returns and actual manufacturing costs in the corrugated shipping box industry has practically vanished. It has been necessary, in the interest of our patrons and ourselves, to fight off every present or prospective increase of production costs and to seek every possible improvement in production and distribution methods.

"It is for this reason that the Thompson & Norris Division of the Hinde & Dauch Paper Company is about to remove from its former quarters at Concord and Prince streets, Brooklyn, to a new modern factory with every improved facility, located at 550 to 564 Ninth street, Hoboken, N. J. The Manhattan telephone number (WOrth 2-1684) will not be changed and for the present at least, the main sales and service offices of the company will remain as heretofore, at 2012 Court square Building, 2 Lafayette street, Manhattan.

"All arrangements for this change have been made while the new plant was under construction, so that service to our patrons will not be interrupted, delayed, or deranged during the actual removal."

Outlook for 1933 Encouraging

"The outlook for 1933 is encouraging," according to J. S. Tritle, vice president and general manager of the Westinghouse Electric and Manufacturing Company.

"There are many indications that the worst is past and that we can now begin the long up-hill pull back to normal conditions. The financial panic is over. The publication of unfavorable earnings statements is no longer headline news and they pass with little or no comment in the daily papers. The hopeless frame of mind of the average man has given way to constructive thinking.

"While there have been calamities of every sort during the last three years, it is a fact that this country is still going on about its business of living, consuming food, wearing out clothing, burning fuel, and using power—and doing the other things that our 120,000,000 people must do. The country has not stopped and this fact has been almost entirely ignored by many of our writers. It is even true that some people have money—actual money to spend for the things they want and they are spending it if we take trouble to dig out the facts. There are plenty of illustrations to prove that the desire of the people to have the things they want and to do the things they want to do is still very much alive.

"In the electrical industry there are a number of hopeful indications. Consumption of electric power has gradually increased during the last few months. Domestic refrigeration is now accepted as a home essential and while the market is rather depressed just at the moment, there will be a large number of electric refrigerators sold in 1933. Commercial refrigeration is being more generally recognized and this opens up a big future market.

"Air-conditioning of homes, buildings, stores and offices is making its first bid for acceptance. While much missionary work must be done before it is in general use, there will be a considerable volume of sales during the next few years.

"Electric heat is finding new uses in industry every day and electric welding is spreading into new fields even in these days of reduced volume.

"The smaller industries which are nearly always the first to feel the effects of improved business are making moderate purchases of electric motors and control. New metering methods, on account of the distinct economies they offer, are being installed in a number of communities. All in all, the electrical business, not in any sense anticipating a boom, is facing the future with a great deal of courage."

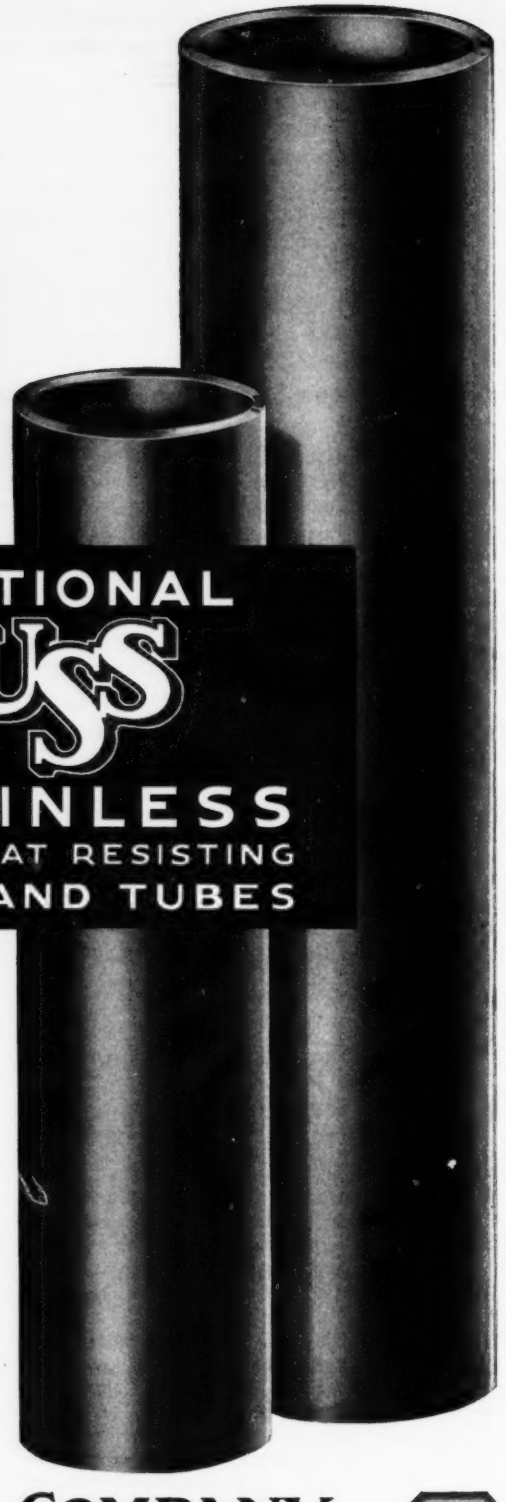
Finnish News Print Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 11, 1933—An agreement has been reached between Finnish newspaper publishers and news print producers whereby the 1933 price for news print has been set at 2.20 Finmarks per kilo for the largest consumers, 2.30 Finmarks for medium sized consumers, and 2.35 Finmarks for the small consumers according to a report from Trade Commissioner Sommer at Helsingfors.

These prices work out at approximately $30, $31.40 and $32 respectively per short ton. Finnish newspaper publishers for some time have been demanding lower prices for news print as the difference between domestic prices and those quoted for export since 1931 has been in favor of export by 26 per cent, a quotation of approximately $27 per short ton obtaining for the export trade while domestic consumers have been paying $34 per short ton.

Reducing the toll of CORROSION



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Tennessee Coal, Iron & R. R. Company
Universal Atlas Cement Company

Pacific Coast Distributors—Columbia Steel Company, Russ Building, San Francisco, Calif. *Export Distributors*—United States Steel Products Company, 30 Church Street, New York, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

The Elliptical Blowpit

By H. W. French[1]

Abstract

The economical advantages of the elliptical blowpit in comparison with other forms may be stated briefly as follows:

A reduction in the cost of construction, maintenance and replacement.

There is more room around the outside of the pit for inspection of pit, building foundations, pipe connections, pumps, etc.

A more effective method for the even distribution of pulp over the surface of the drainer bottom.

The method of applying water for washing and removing pulp from pit requires less time and labor.

An arrangement of sump, pipe lines and pump for removal of pulp with less time and power consumed.

A more effective and economical means for conducting the entire blowpit operation.

In the text book "Manufacture of Pulp and Paper," Volume 3, we find this definition of a blowpit—"A blowpit is a large round tank built similar to acid tanks of long leaf pine, or it is a square chamber of wood or concrete lined with wood, acid resisting brick, or tile." According to the available literature and records on the subject this definition is generally accepted as inclusive of all types and construction of blowpits.

The shape and general proportions of a blowpit are determined by the local space limitations. The ground area opposite the digesters usually is a rectangular space surrounded by buildings. Because the digesters are set in a row, the space allotted to each digester, for blowpit purposes, is a rectangle with the length greater than the width. So far as maximum volume and drainage are concerned, the rectangular blowpit at first thought apparently offers the maximum utilization of space. In actual practice, however, we should put greater value on *effective* drainage area, distribution of pulp, uniform rate of draining and minimum time required for washing, pumping and cleaning the residual pulp from the pit. The elliptical blowpit is more economical because it has these advantages to a greater extent than a rectangular or cylindrical pit.

With the usual rectangular area available we could install a cylindrical pit. The reduction in apparent drainage area would then be about 48 per cent. This loss in drainage area is greater than necessary. In three installations which the writer has in mind when elliptical pits were installed replacing rectangular pits, the actual difference in drainage area was only 14, 12.5 and 9 per cent. The walls of the elliptical pits took less space (thickness) than the former rectangular construction. Ground area occupied by buck-stays, supports, etc., in the rectangular pits was converted into valuable drainage area in the case of the elliptical pits. This installation is shown in Fig. 1. As a matter of actual practice we find no reduction in *effective* drainage area because in using an ellipse all we have done is discard the dead corners in the rectangular pit where the pulp "drifts" and is costly to remove.

One of the principal reasons for developing the improved type of elliptical blowpit described in this article was to obtain a more rapid and efficient draining and washing action in the pit. Both these advantages have been accomplished and a further economy has been brought about in the reduction of time required for removing the pulp from the pit. Another important result of the new design has been to simplify the construction of blowpits and reduce the cost of construction of equipment of this character having a given capacity. An incidental advantage has resulted from the accessibility for repair and inspection in the case of the improved elliptical pit.

The use of rectangular pits has brought about certain complications in construction which have made them quite expensive. Because of the nature of the digester liquor which contains acid, it has been found desirable to construct the pits of wood. In order to provide a liquor tight joint at the corners of the rectangular form of pit and to provide sufficient strength at the corners to withstand the pressure of the contents of the pit, it has been necessary to resort to rather complex and expensive construction at these points. In recent years attempts have been made to overcome this difficulty in a measure by providing a pit having an encasing wall of concrete which is merely lined with wood. This type of construction is not only expensive but difficult to maintain a liquor tight lining. Where leaks have developed in the lining the acid has found its way to the concrete structure and has caused considerable damage. Incidentally it is very difficult to detect leaks in the pit formed primarily of concrete and merely lined with wood since these leaks cannot be detected from the outside until considerable damage has been done and the leaks are not always apparent from inside inspection.

Concrete pits have also been lined with tile. It is important in this form of construction to make due allowance for the quality of tile selected, the cement used for bonding the tiles together and the method of attaching the tiles to the concrete surfaces of the pit. In any form of composite pit with concrete and wood or tile linings it is important to have the lining properly and carefully installed and constant inspection should be maintained to make sure that the maintenance costs are kept at a min-

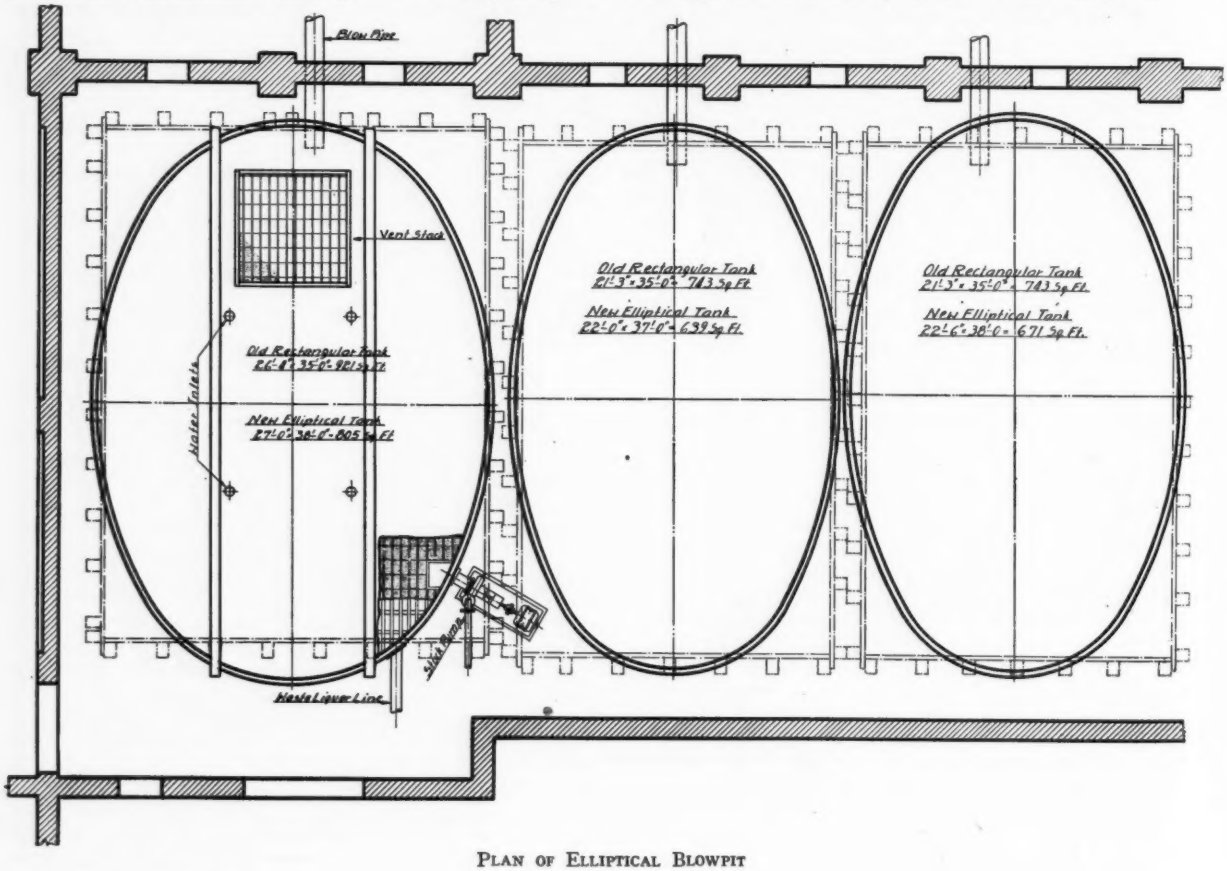
[1]Assist. chief engineer, Hammermill Paper Company, Erie, Pa.

imum. It would be much simpler from a construction and maintenance cost standpoint if we could use one material and not have to resort to a composite pit using two different kinds of materials. If the elliptical pit is constructed of wood there is no necessity for installing a separate lining. If it is desired to make a more permanent installation the pit might be constructed of concrete in which case the elliptical shape would offer advantages in the way of construction. The curved interior would give the tile an arch construction which would assist in holding the individual tiles in place. No matter which type of material is selected, either a single material or a composite pit made of two materials, the elliptical blowpit offers advantages not present in other designs.

The elliptical pit has operating advantages present to a limited extent in the round pit and not at all in the rectangular type. In the rectangular pit there are dead corners and inside obstructions where pulp lodges. The dead corners retard thorough washing in those particular sections. The obstructions make it difficult to clean out the pit after washing and also present exposed edges and surfaces which wear off and fall into the pulp. There are crevices and corners where dirt may lodge. The elliptical pit presents a smooth inside surface which is easy to keep clean. The elliptical shape offers a decided advantage when the pit is being emptied. The hose streams are applied at diagonally opposite ends of the pit near the top. In actual practice the time of emptying has been materially reduced because of the smooth curving walls and the method of applying the hose streams.

There are further indirect operating advantages and economies resulting from the elliptical pit in the matter of construction, maintenance and repair. The elliptical pit is a "drum" in which hoops take the tension of pressure and the continuously curving walls support the "heads" and prevent collapse of the sides due to vacuum when the steam and vapors are condensed. These conditions are also obtained in the round pit but the latter type takes away too much drainage area. The "drum" construction assures tight joints in the walls and the junctions between the tops and sides. It is not necessary to use triangular corner strips to obtain tight joints. These strips, in the case of rectangular pits, become loose when the fastenings rot or rode. They fall into the pulp and are a source of dirt. With a tight blowpit no vapors escape into the mill. The roof is supported by two timbers which run lengthwise of the pit parallel to the direction of the blow. These timbers offer no resistance to the pulp during the blow. The smooth ceiling prevents formation of acid vapor pockets which in other types of construction cause the ceiling to char and splinter. The unobstructed surface of the elliptical pit ceiling permits shower outlets to be located to best advantage because there are no roof timbers to interfere with the action of the spray. The elliptical pit has a decided advantage over rectangular pits because with the former type there is access around the outside for inspection. The blowoff pipe and all outlets for pulp, liquor, etc., can be located at the most desirable points.

We have made a comparison between rectangular and elliptical pits. Let us now compare the cylindrical and elliptical types. We have already set forth that with a given rectangular area available for a blowpit, the difference between drainage areas is approximately 100 per cent for the rectangular, 87 per cent for the elliptical and 52 per cent for the round pit. It is probably seldom that we find a ground area exactly square for the blowpit site. So



PLAN OF ELLIPTICAL BLOWPIT

we discover that the cylindrical blowpit has approximately 35 per cent less drainage area than the rectangular pit. Now consider the depth of pulp in the pit and its reaction to washing. We have in mind a specific case in which the substitution of an elliptical pit for a cylindrical would reduce the depth of pulp and increase the drainage area 25 per cent with only a 3 per cent increase in material used for construction of the pit proper. By reducing the depth of pulp to a minimum consistent with the cost of the pit we have the most effective washing. Less time and water are required to obtain an equivalent degree of washing. The deeper the pulp the more it is compacted in the lower portion due to its weight and also the effect of water added from the top during the washing operation. The more dense the pulp mass becomes during washing the more difficult it is to remove the pulp after washing.

When it comes to the selection of materials which compose the blowpit there are several factors to consider. The geographical location and local conditions will generally establish limits as to the availability and price of the material. These are only "first cost" considerations. We must also attach equal importance to the cost of installation, repairs, maintenance, inspection, length of life, fixed charges on the money invested and the cost of replacement when the blowpit has reached the point where it is no longer economical to use. Very little thought is given to the cost of replacement when the blowpit has reached the point where it is no longer economical to use. Very little thought is given to the cost of repairing and the large expense involved in replacing certain types of more or less permanent construction. When selecting the kind of material for a blowpit all the factors mentioned here should be given detailed consideration. Fortunately, the elliptical blowpit can be constructed of any materials now used for other shapes of pits. In the case of one or two materials the elliptical pit has distinct advantages over the other shapes.

The matter of drainer bottom construction is important. The filtering material should be suitable to permit maximum drainage and as little loss of fiber as possible. Perforated brick or perforated metal are in general use today. Development work is being done on the use of carbon as a filter. In the case of the elliptical pit it is possible to obtain full advantage from the use of any of these filtering mediums.

H. S. Demarest Heads Greene-Tweed & Co.

Greene, Tweed & Co., manufacturers of packing, 109 Duane street, New York, announces that on December 31, 1932, Willard R. Platt resigned as president, secretary and as director of this corporation. Harold B. Platt also resigned as vice-president and treasurer and as director.

Henry S. Demarest, having acquired a controlling stock interest in the corporation, was elected president and treasurer. James A. McKeon was elected vice-president and Herbert A. Erwood, secretary.

It is the purpose of the corporation, not only to maintain its long reputation for the manufacture and sale of goods of the highest quality, but also to effect improvements wherever possible.

James Flett to Open Boston Office

CHICAGO, Ill., January 9, 1933—On or before February 1, the James Flett organization will open a permanent office in Boston, Mass., to look after its interests in New England, handling both the making of service contracts for the Snyder De-Inking Process and also the sale of waste paper to New England paper mills.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced the following elections to membership.

Albert Bankus, assistant executive vice-president, Crown Zellerbach Corporation and the Crown Williamette Paper Company, San Francisco, Cal.

John B. Calkin, fellow of the Textile Foundation, Cornell University, Ithaca, N. Y., has been transferred from Junior to Active membership.

Dennis E. Cousins, superintendent, St. Regis Kraft Company, Tacoma, Wash., has been transferred from Associate to Active membership.

Louis F. Engelhart, chemist, International Printing Ink Corporation, New York, is a graduate of the University of Cincinnati and the Pratt Institute, and was formerly chemist for Philip Ruxton, Inc., New York.

William H. Hart, secretary, Stein-Hall Manufacturing Company, is a graduate of the University of Chicago and has been with this company since 1918.

Samuel D. Hellberg, chemical engineer for the American Writing Paper Company, Holyoke, Mass., is a graduate of the Tekniska Skolan, Norrkoping, Sweden.

John P. Kennedy, assistant general superintendent, American Writing Paper Company, Holyoke, Mass., with whom he has been associated since 1919.

Herman S. Kiaer, consulting engineer, 230 Park avenue, New York, is a 1921 graduate of the Massachusetts Institute of Technology. He was formerly engineer for the Ranheim Kraft Company, Ranheim, Norway; the Union Company, Embretsfors, Norway; and the Abitibi Pulp and Paper Company, Sturgeon Falls, Ontario.

Denis Roberts, chief chemist, Port Royal Pulp and Paper Company, Fairville, N. B., is a 1923 graduate of the University of London, and has been employed as chemist by H. M. Stationer's Office, London, England; the Brown Company, Berlin, N. H.; the Abitibi Power & Paper Company, Smooth Rock Falls, Ontario; and the Restigouch Company, Ltd., Campbellton, N. B.

John E. Whitfield, chief chemist, Brown Paper Mill Company, Monroe, La., since 1924 is a 1918 graduate of Louisiana State University. He was formerly with the Punta Alegri Sugar Company in Cuba and the Ste. Madeliene Sugar Company, Trinidad, B. W. I.

Albany Felt Re-Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., January 9, 1933—A meeting of stockholders of the Albany Felt Company was held this week at which officers and directors for the ensuing year were elected. The board of directors re-elected will again include Parker Corning, Edwin Corning and Frederick McDonald. Subsequently the directors re-elected the following officers: Parker Corning, president; Charles P. Drumm, vice-president; Edwin Corning, treasurer, and Frank D. Cowdery, secretary.

University of Maine Men to Meet

The annual University of Maine dinner will be held on Tuesday evening, February 14 at 6:30 p.m. at the Governor Clinton Hotel, New York, N. Y.

Graduates of Maine, planning to attend the annual meeting of the Technical Association of the Pulp and Paper Industry should reserve this date and notify other Maine men that may be interested in attending.

For further information write to C. H. Champion, 230 Park avenue, Room 1703, New York.

The Improved Wax Test For Measuring Coated Paper Sizing*

By Harold M. Annis[1]

Abstract

The improved wax test is a method of duplicating the tensile stress encountered on the printing press through the use of a series of standardized testing waxes graduated in degree of adhesion.

With the improved wax test smaller differences in sizing can be determined than are dependably distinguishable by the thumb test.

The wax test is well suited for routine inspection purposes.

The wax test shows the relative strength of the bond of fiber to fiber, the bond of coating to fiber, and the bond of particle to particle in the coating and makes it possible to construct a sheet with the proper balance of the various bonds for a given press condition.

It is noted that on papers coated on a single coater, the wire side is harder sized.

It is pointed out that press room and mill difficulties can be reduced and the problem of making a paper best suited for the customer's conditions put on a more sound basis if samples which have had the proper sizing and ink receptivity are submitted for complete examination by the precise tests that are now available.

Introduction

In the manufacture of coated papers, the body stock is coated with a mixture composed primarily of pigments and an adhesive. The most commonly used pigments are clay, satin white, blanc fixe and calcium carbonate, while the adhesive may be casein, starch, or glue. In general, a coated two sides sheet will be approximately 30 per cent coating. The proportion of adhesive to pigments will depend on such factors as the sizing requirements of the rawstock and the pigments and the type of printing for which the paper is to be used.

With a given pigment and adhesive, the amount of adhesive required to properly bind or size the pigment to the body stock will depend on such factors as the degree of sizing, the sheet structure, the stock processing, and the filler content of the rawstock. With a given body stock and adhesive, the quantity of adhesive required for proper binding of the coating pigment will vary widely due to the difference in the physical and chemical properties of the various materials. It is also possible that the adhesive required to get a given degree of sizing may be affected by such manufacturing factors as the methods of coating application, spreading, and drying.

It should be made clear at this point that the term "sizing" as used in referring to uncoated book papers deals with the resistance to the penetration of ink or water, while "sizing" in the coating man's vocabulary refers to the binding of the coating to the body stock.

Under different press conditions, the tensile stress applied to the coating will vary considerably. For a given type of printing, it is therefore necessary to have the proper degree of binding of the coating to the body stock if the paper is to work satisfactorily under those conditions. For example, the stress to which the paper is subjected for single color flatbed presswork will be less than that encountered on heavy forms involving several colors on some other types of presses.

In recent years, coated paper manufacturers have sought a precise and dependable means of measuring the degree of sizing of coated papers. It is obvious that the development of such a method of testing would lead to taking a part of the guess work out of coated paper manufacture and would mean a more scientifically built product for the particular printer's conditions. It would also open up the field to more intensive research work by presenting to the investigator a precise method of measuring small differences in sizing.

In the past, the sizing of the coated paper has been largely controlled by the coating superintendent's thumb test in which he attempts to duplicate the stress encountered on the press by pressing his dampened thumb firmly against the sheet, removing it sharply while holding the sheet down with the fingers of the other hand, and then examining the thumb and sheet for a picking of the coating or a splitting of the body stock. More recently many coated paper makers have used a single ordinary sealing wax to aid in standardizing sizing. This single sealing wax test has not been entirely satisfactory in that it fails to show the extent to which the sheet was too hard or too soft. There is also always the question of uniformity of the adhesive properties of the wax since the ordinary sealing wax was certainly not made for precise testing purposes. However, this test has aided the paper maker and printer to a certain extent by reducing the difficulties due to soft sized paper.

As a definite improvement and refinement over the ordinary sealing wax test, one is now able to obtain sets of carefully standardized testing waxes with a graduated degree of adhesion. One series of waxes now available is composed of twelve waxes with coated paper sizing falling in the central part of this range. The wax makers claim that the constancy of the adhesive strength of the waxes is controlled by careful choice of materials, and standardization of procedures and that they are further checked on a series of standard papers. The other series of waxes consists of a set of four waxes which were apparently prepared to be used largely for measuring coated paper sizing. The makers state that these waxes have been carefully calibrated to actual press tests.

Through the use of a series of waxes with graduated degree of adhesion, one is able to establish sizing standards for a given press condition which are in reality the sizing limits. If the printer's difficulties are to be reduced to a minimum, it is necessary to establish maximum and minimum limits in degree of sizing since beyond a certain point in either direction complications are encountered.

Wax Test Procedure

With the wax test, an attempt is made to duplicate the tensile stress encountered on the press by melting the end of the stick of testing wax, applying it to the sheet gently, allowing the wax to cool and get a grip on the coating,

* To be presented by title at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 13, 1933.

[1] Assoc. member TAPPI, Chief Chemist, Allied Paper Mills, Kalamazoo, Mich.

Contribution of TAPPI coating committee.

and then removing the wax with a slight rolling motion while the sheet is held down with the fingers.

Points To Be Considered

In submitting suggestions for a tentative standard procedure for the wax test, the following points should be considered.

1. Condition the samples under standard humidity and temperature conditions.
2. Carry out the test under the standard conditions.
3. Standardize on a standard diameter for the wax.
4. The end of the wax must be free from any coating or fibers from a previous test.
5. Melt the end of the wax over an alcohol flame until 4 or 5 drops drip off.
6. Have the sheet to be tested backed up by a smooth surface.
7. Place the molten wax on the sheet without exerting undue pressure.
8. Allow the waxes to cool for 15 minutes. The 15 minute cooling period is ample cooling time for the testing waxes referred to above.
9. After the waxes are cool, remove them by giving a slight rolling motion to the wax rather than a vertical pull. While removing the wax, hold the sheet down with the fingers of the other hand. It has been suggested that a metal strip with holes for the waxes might be used in holding down the sheet.
10. Examine the paper and wax to determine the reaction of the paper to the stress applied by the particular wax.
11. Report the result of the wax test as having failed on a certain wax with a description of the type of failure. The failure may be described as a stock split, a coating pick or it may be only a slight rupture of the surface, without any coating or fiber having been removed.

It has been demonstrated experimentally that the wax test is affected by humidity and temperature changes and it is therefore important that the test be carried out under standard conditions for precise work. It has been the writer's experience that the improved wax test is suited for routine inspection purposes and the results can be readily duplicated if the procedure is followed precisely.

Thumb Test vs. Improved Wax Test

Reviewing the available literature relative to the wax test, it is evident that there exists some difference of opinion as to the relative merits of the wax test and the thumb test. It is therefore a logical starting point in this discussion to make a direct comparison of the two methods of testing coated paper sizing.

The samples for the comparison of the two methods were made by coating a 48 pound rawstock with clay coating mixtures of 13, 15, 17 and 19 per cent casein. The rawstock tested 15 mullen, 40 tear, 13 seconds Carson curl test, and 12 per cent ash. In each case the coat weight was the same and all samples were dried under comparable conditions in warm air. The casein was cut with 10 per cent of soda ash and all coating mixtures were adjusted to the same solids content. All samples were coated on the wire side.

The samples were submitted to various experienced coating men for them to arrange the samples in their proper order for hardness of sizing as shown by the thumb test. They were also asked which sample they considered just hard enough for a certain printing job with which they had all had considerable experience. The same samples were tested with the series of waxes. The results were as follows:

TABLE I

Sample	Wax Failed	Mr. A	Mr. B	Mr. C
13 Per cent Casein.....	No. 4	1	1	1
15 Per cent Casein.....	No. 5	2	2	3
17 Per cent Casein.....	No. 7	3	4	2
19 Per cent Casein.....	No. 8	4	3	4

In the above table, the "Wax Failed" column refers to the first wax in the series of twelve which was of sufficient tenacity to cause a stock split or coating pick. In each case the failure was a definite stock split. The designations 1, 2, 3 and 4 refer to the order of sizing in which the coating men arranged the samples, the designation 1 referring to the softest.

The coating men differed considerably in their idea of which sample was just hard enough for the particular printing job. The opinions varied from the 15 per cent casein sample to the 19 per cent casein sample, while an extended experience using the wax test on this particular grade had shown that if the No. 6 wax was passed, the sheet was safely sized.

Examination of the above results leads to the conclusion that with the thumb test the coating man is able to do fairly well in picking out considerable differences in sizing, but has some difficulty in making smaller distinctions. The differences which are too small for dependable distinction by the thumb test stand out as large differences on the wax test and would certainly show up as noticeable differences on the printing press. The wax test, therefore, appears to be a refinement over the thumb test at its best and has the advantage of making it possible to express the degree of sizing in more precise terms.

The large difference of opinion as to the proper degree of sizing for the particular printing job illustrates the part that the personal factor has played in coating sizing. The coating man who felt that only the 19 per cent casein sample was hard enough would be submitting a sheet that would possibly give such pressroom difficulties as offsetting and the cost of materials would be unduly high, while the coating man who felt that the 15 per cent casein was hard enough would probably have the printer, and himself, in trouble a good part of the time.

The results shown in Table I indicate that the graduations in the adhesive strength of the waxes in this part of the range correspond to approximately 2 per cent of casein. With more experience with the wax test, one is able to improve its sensitivity to a fraction of a per cent.

Mechanics of Coated Paper Sizing

It is possible to conceive of coated paper sizing as a condition involving the relative strength of three bonds, namely, the bond of fiber to fiber in the body stock, the bond of the coating to the body stock, and the bond of particle to particle in the coating. On the press, another bond between the plate, ink, and sheet comes into play. Therefore when the sheet is subjected to the tensile stress of the press, depending on the relative strength of the various bonds, it may split, the coating as a whole may pick off, the surface film of the coating may scum off, the sheet may blister or lift which may be considered as the first stage of a stock split, or it may remain intact.

When the series of waxes were applied to the wire side of the rawstock used for the samples of Table I it was found that the stock did not split until the No. 10 wax was reached. Since the coated sheets split on a less tenacious wax, the coating must have weakened the bond of fiber to fiber. The wax test on a sheet of the rawstock coated with a dilute solution of soda ash showed that this bond had been greatly weakened. The results in Table I also show that with each increase in casein this bond is strengthened so that at some point in the series of increases the bond is strengthened out of proportion to the increase in casein. This break in the rate of increase of sizing was

checked by the ink receptivity test since it was possible that the graduations from wax to wax were not equal. The ink receptivity test showed a much larger change in this property with the increase of casein from 15 to 17 per cent than the other changes had produced.

The writer has noted that a coated sheet that shows a bad stock split on a given wax will pass that wax readily if a thin casein wash is put on over the coating. It is questionable to the writer whether this casein actually penetrates into the body stock and strengthens the bond of fiber to fiber. The observation may be an indication that the casein film has so resisted the penetration of the molten wax that it has been unable to grip the coating and split the stock.

Summary of the Various Stages

Examination of the results of the wax tests on the series of samples showed that the failure was characterized by a complete removal of the coating along with some fiber. Apparently it would have been necessary to further reduce the percentage of casein before getting a picking of the coating without removing any fiber. The various stages of coated paper sizing may therefore be summarized in the following manner. First, the weakening of the bond of fiber to fiber by the application of the coating. Second, the picking of the coating without removing any fiber when the casein concentration is so low that the bond of fiber to fiber is stronger than the bond of the coating to the stock. Third, the splitting of the body stock when the casein concentration has been increased so that the bond of coating to the body stock is stronger than that of fiber to fiber. Fourth, the passing of the particular wax when the casein concentration has been increased so that the bonds of fiber to fiber and of coating to body stock are both stronger than the tensile strength of the wax.

Wire and Felt Side Sizing

When the series of waxes were put on the two sides of the rawstock described above, it was noted that the felt side split on a much weaker wax than was required to split the wire side. Coated one side samples using the same coating mixture were made and it was found that the samples coated on the wire side were harder sized.

In a recent publication, it was stated that the variation in the sizing on the two sides of papers made on single coaters was due to the difference in the composition of the coating used on the two sides since there was often a time interval between the coating of the felt and wire sides. It was stated that on papers coated on a double coater, the weaker sized of the two sides was the side that was lowermost in passing through the coating machine, regardless of whether it was the wire or felt side, and it was believed that this was due to the effect of gravity causing a concentration of the higher specific gravity minerals at the surface on the bottom side. It should be noted that the ordinary sealing wax test and the thumb test were used to determine differences in sizing. It would be interesting to check the contention relative to papers made on double coaters with the more precise methods of measuring sizing now available.

Difference in Sizing Requirements

The writer's experience on papers coated on single and tandem coaters has been that such factors as a change in the composition of the coating on the two sides are somewhat secondary to the difference in the sizing requirements of the two sides of a typical rawstock. It has been observed that the difference in the sizing requirements of the two sides of an unfilled rawstock are reduced to a minimum. It is likely that under such conditions such factors as the effect of gravity would come into play with more importance.

Importance of Sizing in Printing

It has been demonstrated that there is a close relationship of coated paper sizing and the important printing quality of ink receptivity. Photomicrographic work has shown that when the sheet is too resistant to the penetration of the ink, the halftone dot appears to have a "halo" due to the ink having been squeezed out from under the dot, while when the sheet is too receptive the dot will have a fuzzy outline. By adjusting the properties of his inks relative to the rate of penetration and drying, the printer is able to compensate for reasonable variations in ink receptivity.

It is evident that there are a number of factors affecting the ink receptivity of a coated paper, but since the degree of sizing may be considered an important contributing factor, it may be seen that having a test capable of measuring small differences in sizing makes it possible to construct a sheet better suited for the particular customer's press conditions. Instead of making a series of trial and error attempts to give the customer the proper sheet, the pressroom and mill difficulties can be reduced to a minimum by utilizing the precise tests that are now available.

Must Meet Typical Conditions

A considerable percentage of the coated paper made is marketed through jobbers, so that the paper manufacturer has little or no opportunity to learn the specific use to which the paper is to be put. It is therefore necessary to construct the sheet to meet the typical condition. For example, the mill may be making a regular grade of coated litho. The sizing standards set up on this grade must conform to the average use to which the paper will be put. The customer who is using the sheet for black and white work may find the sheet too resistant for the best results while another customer may find the sheet too absorbtive for his particular job involving metallic inks or varnishing. In each case, a sheet better suited for the customer's requirements could have been submitted had the particular use of the product been known.

It is frequently noted that a coated sheet with the proper ink receptivity and sizing and only a fair surface out-prints another sheet with a more compact surface but having too much or too little ink affinity. It is therefore necessary to have sizing specifications and standards in constructing a coated sheet for a given job. An appreciable tonnage of coated paper purchased today carries a wax test specification because the customer has learned that he will invariably experience certain press room and printing result difficulties if the sheet varies beyond certain sizing limits.

Fortunately, it is not necessary for the customer to go through the process of developing his own specifications. In a few cases, the jobbers have their own laboratories and submit the specifications to the paper mill. Since most leading paper mills maintain laboratories it is likely that the required sheet can be developed with the least pressroom and mill trouble by submitting a sample whenever possible to the paper mill laboratory for complete examination by the precise tests developed to aid in removing the guesswork from coated paper manufacture. The guesswork will be further reduced if the customer will note which properties (for example, fold, finish, brightness, opacity) he considers most important, since so many properties work against each other.

The wax test should further aid the printer by making it possible to now use certain materials to improve printing qualities which could not be used safely in the absence of a method of measuring small differences in sizing.

Problems in the Operation of a Yankee Machine*

By William Fogarty[1]

Abstract

The problems outlined are those which we have encountered in the operation of our machine and probably most if not all are present to some extent on all machines of this type. The solutions to these problems which we have set down are those which we have found in our experience to be workable, depending on circumstances. As is well known there are so many variable factors in the operation of any paper machine that due thought must be given to every individual problem. We are aware of the fact that probably no two machines act or can be handled exactly alike and that mill men must be governed largely by their own experience in taking care of any trouble that may arise.

Introduction

A Yankee type paper machine is much like any other fourdrinier machine with the exception of the drier part. This is usually a cylinder which is 10 or 12 feet in diameter and must do all the drying and impart to the drier side of the sheet a high gloss finish. Our machine has a 10 foot diameter drier on which we dry a medium weight full bleached sulphite sheet and we will mention some of the problems which we encounter in the operation of this machine, particularly in the drier part.

As on other machines the kind of stock and its treatment, the various parts of the machine such as the slice, suction, felts, rolls, etc., have an influence on the sheet and they may also have some effect on the drying rate which in its turn is the cause of certain effects on the sheet.

Doctor Blades

The most important thing about the drier is to keep its highly polished surface clean. This is done by one or two doctor blades being held against its surface and they can be of the stationary or vibrating types. The doctor blades usually are of brass or steel and there is a great difference of opinion among mill men with respect to the proper hardness or thickness and as to whether they should be sharp or blunt and at what angle they should be set against the drier. We have been using a ¼-inch thick blade of boiler steel with a sharp edge which has given good results but we expect soon to replace it with a thin blade which will require less pressure and which will not wear down to a broad heel. The thin, flexible steel blades made by several manufacturers seem to be the logical kind to use as they require but little pressure and due to their flexibility should conform to the surface of the drier regardless of irregularities.

During periods of starting up and shutting down and when breaks occur, the doctor prevents the sheet from following around the drier surface, but its main purpose is to keep the drier from becoming coated. This coating is caused by impurities in the water, alum, size, color, filler or particles of fibrous material and if allowed to accumulate will present serious difficulties in the drying and finish of the paper. There are times when the doctor will fail to keep the drier clean and other means must be used to overcome the trouble. On some machines the bottom doctor is made of brass or wood, over the edge of which is lapped old wire cloth or felt. If felt is used the lower edge is immersed in oil, kerosene, gasoline or possibly other liquids. The felt draws the liquid up against the drier thus making easier the removal of the coating.

Sometimes a number of dark lines resembling pencil marks appear in the sheet. These lines run parallel with the edges of the sheet and we have noticed that they are present only when a wide heel is worn on the doctor. When the doctor is refitted or a new blade put in the lines disappear.

Effect of Alum

We have found on our grade of paper that this coating condition can be controlled to a great extent by the treatment of the stock and the amount of alum and size we use in the furnish. We seem to get best results if we can keep a pH of 5.4 to 5.6 at the head box; the drier is then usually kept free of coating. This condition does not remain constant however, probably due to differences of the pulp or the other parts of the furnish and from time to time it may be necessary to raise or lower the pH. Generally speaking the more alum we use in the furnish the cleaner the drier remains and the better is the sheet but more alum may be a detriment elsewhere on the machine.

We have often noted that by using more alum there seems to be an improvement in the performance of the pickup felt and we have better contact between the pressure roll and the drier. On the other hand alum, above a certain amount may be the cause of trouble with the wet felt, and we are then faced with the problem of handling a felt that is hard and which drains poorly, tending to crush and mark the sheet and wears out quickly. By decreasing the alum and increasing the size we obtain another condition. The wet felt remains soft and open, does not mark and lasts longer. The pickup felt is affected the same way and because of the softness of the felt the draw between the press and drier may have to be kept much tighter, thereby weakening it and making its life short. The sheet tends to leave the edges of the felt and the contact between pressure roll and drier is poor, making a sheet with a cockly appearance and a mottled irregular glaze. This sheet will be very apt to cut at the calenders and is bulkier than usual. We must determine from experience what amounts of size and alum are best for the sheet and for running the felts.

Blow-Marks

Blow-marks are a problem and can be very troublesome at times. These ordinarily occur in the starting up of a new pickup felt and are probably due to the felt being soft and to the natural oils of the wool. We try, when possible to change these felts on Sunday, size them and let them stand till Monday. They start off much better this way than when we have to make a change during the week and start right up again. When we used more size and less alum these marks made their appearance and disappeared again with the addition of alum. They may also be caused by the pressure roll not being ground properly or the roll wearing out of shape. Usually they can be gotten rid of by regulating the draw of the felt, weighting the press more, easing off the pressure roll or by freeing up the sheet. After a short period until the felt is broken in these marks will not show up again. It appears that rolls of proper density to give good cushioning would

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* To be presented by title at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 13-16, 1933. Contribution of the Paper Manufacture Committee.

[1] Assoc. member TAPPI, superintendent, Pittston Paper Corporation, Pittston, Pa.

avoid most of this trouble and probably a higher pH could be maintained.

Blisters

Another problem and often a serious one is blistering. Blisters show up when the pickup felt gets old and they keep the machine tender busy getting rid of them. It seems that when a felt gets old and filled up it absorbs less water and allows the evaporated steam to form between the sheet and the drier, making a spot that is not dried and which has no finish and turns black on passing through the calenders. This condition may be helped by freeing the sheet, reducing the alum, vigorous brushing of the felt, close regulation of the steam, screwing up the pressure roll; harder pressing, changing to lighter weight paper or slowing down. When they become too bad the only real remedy is to put on a new felt.

Here again good covers and the rolls correctly ground will avoid much of this trouble. Since our machine is of a somewhat different construction than the ordinary Yankee we are unable to carry water on the pickup felt all the time. When blisters appear we turn on a spray across the felt and in a short time they are gone. If this spray is left on we may have blowing occur or run the risk of the sheet crushing at the press.

A pressure roll that has high and low places can also cause trouble by making soft and hard places in the finished paper. This can be remedied to some extent by using more alum to harden the sheet, close up the sheet more and by the adjustment of the air on the calenders. A roll that is a trifle full on the ends will cause the edges of the sheet to stick to the drier and break, and is also apt to buckle the felt, and weaken it. This can be overcome by buffing the high places until the roll can be taken out and ground.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

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Sulphite Process

Concerning the Determination of Calcium Oxide in Sulphite Liquor. E. Graap, Maxau. Papier-Fabr. 30, No. 18:289-290 (May 1, 1932).—The method the author has proposed has been criticized; in this article he shows that the error introduced is nearly negligible and the method as a whole is better than the others.—J. F. O.

Steam Intake Sleeve for Sulphite Digesters. Einar Morterud. U. S. pat. 1,869,270 (July 26, 1932).—The steam intake sleeve is surrounded by an auxiliary sleeve, passing from the exterior surface of the digester shell, through the brick lining, and serving as a support for the brick lining. The steam intake proper and the auxiliary sleeve are separated by means of an annular space, which is in direct communication with the interior of the digester and which extends outwards at least as far as the digester shell, so that the two sleeves are in direct heat transmitting connection with each other only at their outer ends, so as to prevent expansion stresses being transmitted to the brick lining.—A. P.-C.

Cyclic Pulping Process. George A. Richter assignor to Brown Co. U. S. pat. 1,867,593 (July 19, 1932).—In a cyclic process, raw material is cooked in a non-acid solution of sodium sulphite without completing fiber liberation and in an alkaline liquor to effect complete fiber liberation. Spent liquors from both cooking steps are mixed, the inorganic content of the mixture is smelted in a reducing atmosphere to produce sodium carbonate and sodium sulphide, sodium carbonate is crystallized from the smelt and is treated with sulphur dioxide and water to produce a non-acid liquor for further use in the process, and the rest of the smelt is used for forming alkaline liquor for further cooking.—A. P.-C.

Direct Heated Digester Operation Control. M. B. Hall. Paper Trade J. 95, No. 15:31-32 (Oct. 13, 1932).—Attention is drawn to the fact that the development of sulphite-resistant alloy steels has permitted the practical realization of automatic steam input and relief control according to the Allen patents. Two installations have been made in Pacific Coast mills and a third is being installed on a 15-ton digester in the East; their performance will be reported on in due course.—A. P.-C.

Sulphite Digester for Research and Instruction. W. L. Beuschlein and Frank H. Conrad. Ind. Eng. Chem. (Analyt. Edit.) 4:415-417 (Oct. 15, 1932).—The authors show that expensive research equipment can be also used for undergraduate instruction in industrial chemistry and chemical engineering, and illustrate this by means of a special KA 4 metal rotary digester for sulphite pulping studies.—A. P.-C.

The Sulphite Process in Britain. D. Wragg. Paper Maker & Brit. Paper Trade J. 83:TS152-154 (April 1, 1932).—A description of the procedure followed for cooking and bleaching in the only two mills employing the sulphite process in Great Britain.—A. P.-C.

Sulphite Pulping Process Developments. M. Morterud. Paper Trade J. 95, No. 12:28 (Sept. 22, 1932).—Polemical with Lundberg. Paper Trade J. 93, No. 25 (Dec. 17, 1931) showing that direct cooking with forced circulation can give as high grade a pulp as indirect cooking.—A. P.-C.

Practical Sulphite Cooking. Ragnar Monnberg. Paper Trade J. 95, No. 12:28-35 (Sept. 22, 1932).—A practical discussion of the manner in which sulphite digesters should be handled, based on years of practical experience with experimental digesters and with both small and large (up to 30-ton) commercial digesters, bringing

out more particularly the differences in circulation produced by different steaming methods in large and small digesters and explaining the proper application of the principles of cooking by steaming in harmony with the circulation.—A. P.-C.

Variables in Making Sulphite. F. H. Johnson. Paper Mill 66, No. 31:10, 12 (July 30, 1932).—A brief discussion of variations in quality due to changing conditions in the manufacture of sulphite pulp.—A. P.-C.

Characteristics of Pacific Coast Sulphite Pulps. H. R. Heur and W. N. Kelly. Pacific Pulp Paper Ind. 6, No. 7:21 (June 1932); Paper Mill 55, No. 25:14-15 (June 18, 1932).—A brief discussion bringing out the merits of sulphite pulps manufactured in the Pacific Coast region.—A. P.-C.

Chemical Studies of Sulphite Waste Liquor Pollution of Sea Water. H. K. Benson. Ind. Eng. Che. 24:1302-1304 (Nov., 1932).—The chemical composition of sea water containing sulphite waste liquor is notably affected by concentrations of one part of liquor in 1200 of sea water. There is no evidence that sulphite waste liquor permanently accumulates in sea water, and in Oakland Bay (subject to pollution) the results do not warrant the belief that the sea water is polluted to any detectable degree. Precipitated lignin is readily oxidized by potassium permanganate.—A. P.-C.

Pulping Process. Gustaf Haglund assignor to Patentaktiebolaget Gröndal-Ramén. U. S. pat. 1,870,452 (Aug. 9, 1932).—To reduce the content of resins, etc., in the product, pulp is separated from the major portion of the waste liquor of sulphite cooking before the temperature of the liquor has fallen to such an extent that the resins are appreciably precipitated.—A. P.-C.

Action of Ammonium Sulphite on White Fir. W. S. Hepher and E. C. Jahn. Paper Trade J. 95, No. 19:33-36 (Nov. 10, 1932).—A report of the results of an investigation into the action of ammonium sulphite on lowland white fir (*Abies grandis*).—A. P.-C.

The Elimination of Pitch Trouble. O. Brauns. Pulp Paper Canada 33:333-336, 383-388 (Sept., Oct., 1932).—A report is given of an extensive investigation carried out both in the laboratory and in the mill on the causes and elimination of pitch troubles in sulphite pulp and paper mills. No appreciable relief from such troubles can be expected from seasoning of the wood or from altering cooking conditions. A process consisting in properly adjusted additions of sulphite waste liquor and alum to the slush stock was developed and is being successfully applied in one of the Tibitibi mills in eliminating pitch troubles. Theories are advanced to explain the causes of pitch troubles and the mechanism of the process devised in eliminating them.—A. P.-C.

The Control of Viscosity in Sulphite Cooking. Hazime Okada and Eizi Hayakawa. Cellulosechemie 13, No. 6:97-100 (June 12, 1932).—Experimental cooks were made under certain conditions and complete physical and chemical tests were made. Up until the time the liquor became dark the viscosity was very high, but thereafter it decreased rapidly, varying directly as the lignin content. The viscosity gives a better knowledge of the quality of the pulp than either the copper number or the alpha cellulose determination.—J. F. O.

The Hydrogen Ion Concentration of the Cooking Liquor During the Sulphite Pulp Cooking Process. Erik Hagglund and Arvid Johansson. Cellulosechemie 13, No. 8/9:139-143 (Aug. 7, 1932), Zellstoff Papier 12, No. 9:359-362 (Sept., 1932).—Summary of the important facts already known and the value of pH control. During the impregnation period the pH of the cooking liquor is about 1.7, it then increases to 2.5 to 3.0 and toward the end of the cook it goes back to 1.8 to 2.0. The authors carry out several cooks and the pH obtained during the progress of the cook is tabulated.—J. F. O.

The Kinetics of the Reaction of the Sulphite Cooking Process. A. St. Klein. Zellstoff Papier 12, No. 6: 233-34 (June, 1932).—The author first briefly reviews the reactions which take place during the sulphite cooking process. These reactions are then expressed in mathematical equations so that the speed of the reaction or the amount of incrustants going into solution can be calculated for certain conditions. For every 10 degrees rise in temperature, the speed of reaction is increased twice. The speed of reaction depends mostly on the hydrolysis reaction. An exhaustive bibliography accompanies the article. —J. F. O.

Manufacture of Pulp by Means of Forced Circulation. E. Morterud. Zellstoff Papier 12, No. 6:235-36 (June, 1932).—The author presents a brief review of the progress of forced circulation for sulphite cooking, from the first patents taken out to present installations.—J. F. O.

Recent Results with the Pre-heating Under Pressure of Sulphite Cooking Liquor. G. Soltau. Zellstoff Papier 12, No. 6:237-38 (June, 1932).—The advantages and results in practice of preheating sulphite liquor are discussed.—J. F. O.

Supply and Substitution of the Heating Tubes for a Sulphite Evaporation System. Sembritski. Wochbl. Papierfabr. 63, No. 26:501 (June 25, 1932).—Even though the sulphite waste liquor is neutralized with lime, the tubes become corroded due to the breaking up of calcium sulphite which forms sulphurous acid and this attacks the tubes. A thin scale of calcium sulphate is gradually formed which acts as a protective coating but this is detrimental to the heat interchange and must be removed by boring. The author recommends the substitution of copper tubes and gives the method for calculating the cost of same.—J. F. O.

Concerning the Action of Salt on Sulphite Pulp. E. Richter. Tech. Chem. Papier Zellstoff Fabr. 29, No. 1:1-10 (Feb. 27, 1932).—Various kinds of pulp evaluations (relative quality number, relative tear-fold number and relative fold number) are discussed, and explanations are given for variations in mill results which have previously been unknown. It was shown that with increase in salt content of the wood, the sulphuric acid content of the waste liquor increased and the strength properties decreased. The effect of the salt was a certain duration of action of the wood, a decrease in yield of about 10 per cent and a rather great weakening of the fiber, especially in the bleached pulp, if the wood has lain in salt water more than two or three months. The action of various salts are investigated and compared.—J. F. O.

Rust-Proof Steel and Sulphite Cooking Liquor. Zellstoff U. Papier 12, No. 8:328-330 (August, 1932).—The part that chromium, nickel and molybdenum plays in alloys is discussed. The electrochemical process and the formation of a protective coating are also described.—J. F. O.

Theory of the Sulphite Cooking Process. Zellstoff Papier, 12, No. 8:324-326 (August, 1932).—Discussion of the reasons for believing that the sulphonation and the dissolving out of the lignin depends upon hydrolysis. Experiments are given to show that the hydrolytic action and the pH are the decisive factors in the cooking. Several tables and curves are added.—J. F. O.

Protection Against Gases. Freitag. Papier Fabr. 30, No. 27:438-440; No. 28:448-450 (July 3, 10, 1932).—A complete description of the various appliances for pro-

tection against gases with special reference to the sulphite process. Many diagrams and drawings accompany the article showing the construction of the masks and their cannisters.—J. F. O.

Viewpoints on the Circulation of Sulphite Liquor. Torsten Samson, Papier Fabr. 30, No. 21:325-329; No. 22:341-44 (May 22, 29, 1932).—If sulphite cooking is not carried out with the circulation of the liquor, large variations of the temperatures in the digester takes place as well as differences in the acid composition which results in a decidedly uneven cook. The author recommends the Schauffelberger system of circulation, the apparatus of which is made of corrosion resisting material, preferably V4A steel of Krupp. A complete system is described for which it is claimed that a uniform bleachable pulp is obtained with 10 per cent greater yield.—J. F. O.

Concerning the Sulphonation of the Lignin of Spruce Wood and the Formation of Acetic Acid During the Sulphite Cooking Process. E. Hagglund, A. Elkwall and J. Hostomsky. Wochbl. Papierfabr. 63, No. 23A:26-30 (June 4, 1932).—In the treatment of spruce wood with sulphurous acid and bisulphite solutions at temperatures under 100 deg. C. from about 70 to 90 deg., the lignin of the wood combines with sulphur in a strongly bound state. The sulphonation of the lignin takes place faster with sulphurous acid than with sodium bisulphite solution, which seems to depend on the fact that the solid lignin sulphonic acid formed goes into solution easier in the former and therefore facilitates the penetration of the sulphonation means. When wood is decomposed with 4 per cent sulphurous acid solution at 70 deg., the yield of acetic acid is as great as with Schorgers distillation or the calcium oxide treatment. The qunatities of loosely bound SO_2 in the liquor increase in equivalent molecular relation to the same degree that the acetic acid goes into solution. The acetic acid, which occurs in the usual sulphite cooking, is composed partly of an easily hydrolysed acid, and part is formed through the energetic attack of the cooking acid at high temperatures upon the wood.—J. F. O.

Investigation in the Mill Over the Red Coloring of Sulphite Pulp. Harry Alfthan. Papier-Fabr. 30, No. 17:282-283 (April 24, 1932).—The investigation was carried out for five years on 8500 cooks and 15,000 samples therefrom. The pulp or strips of paper were dipped in 1.5 per cent hydrogen peroxide for 20 seconds and then conditioned in a room under constant conditions for 20 minutes. The resulting red coloration was then compared with a standard set of colors. The content of total and combined SO_2 in the cooking acid and the cooking temperatures had no effect, providing the pulp was cooked to the same degree. Poorly washed pulp shows a more intense red coloration. The color of the cooking liquor at the time of dumping also did not have any effect. The presence of iron and other metals had no influence. The rawer the pulp, the more intense is the red coloration, and this is the most important factor, so if the red coloration is to be diminished the pulp must be cooked more thoroughly. —J. F. O.

Arrangement for Pulp Digesters. Einar Morterud. Fin. pat. 14,121 (Sept. 20, 1930).—The cooking liquid is pumped from the center of the digester through a perforated ring contained therein, and this liquor is then introduced into each end of the digester.—J. F. O.

Arrangement for Direct Heating of Pulp Digesters with Inner Circulation. Einar Morterud. Nor. pat. 50,158 (Feb. 13, 1930).—The heating steam is led to a container within the digester which forms a part of the liquor circulation line.—J. F. O.

Process and Arrangement for Cooking Wood and Other Fiberous Materials Containing Cellulose. Carl Busch Thorne. Ger. pat. 549,228 (March 25, 1927).—The invention concerns itself with the cooking of wood with sulphite acid which is warmed outside the digesters and with the aid of an extra container the acid is pumped into the digester by means of gaseous pressure and then removed. The invention is characterized by the use of sulphur dioxide as the pressure gas, thereby attaining a constant action of the sulphur dioxide on the material to be cooked as well as maintaining a constant pressure during the cooking. The arrangement is such that the digester, the extra container and other vessels are kept at constant pressure by the sulphur dioxide container.—J. F. O.

Sulphite Waste Liquors

Recent Investigations Concerning the Preparation of Vanillin from Sulphite Waste Liquor. K. Kurschner and W. Schramek, Tech. Chem. Papier Zellstoff Fabr. 28, No. 5:65-71 (Sept. 26, 1931).—A detailed description of the preparation of vanillin.—J. F. O.

Recent Investigations Concerning the Preparation of Vanillin from Sulphite Waste Liquor Karl Kürschner and W. Schramek, Tech. Chem. Papier Zellstoff Fabr. 29, No. 3:35-42 (June 4, 1932).—Discussion of the possibilities of the manufacture of vanillin by the process of the authors. Much operating data is given along with numerous curves. In brief the process is as follows; 50 c.c. of waste sulphite liquor is treated with 3 grams of sodium hydroxide for 4 hours in a pressure cooker under 6 atmospheres of pressure, giving a yield of vanillin of 0.124 grams.—J. F. O.

Process for the Production of Oils or other Hydrogenated Products from Wood or from Substances Made Therefrom. A. R. Lindblad. Swed. pat. 73,302 (June 20, 1929).—The starting product is mixed or drenched with waste liquor from the production of cellulose, and subjected to a thermal splitting off process, whereby the substances obtained which are more or less completely carbonated are reduced, that is hydrogenated. —J. F. O.

Process for the Pickling of Metals, Especially Iron and Steel. Swed. pat. 72,884 (March 27, 1928). A froth is formed in the acid pickling bath by the use of sulphite waste liquor and an aldehyde or an aldehyde forming material.—J. F. O.

Process for the Purification of Sugar Syrups, Especially from Molasses, Wood Sugar Syrup and Sulphite Waste Liquor, for the Purpose of Manufacturing Alcohol and Pressed Yeast, by Treatment with Absorption Means. M. Fischl's Sohne. Aust. pat. 125,965 (Sept. 15, 1930).—The syrup or the starting products containing carbohydrates of syrups are brought to a concentration of 30 deg. Be., preferably without the introduction of heat, and then treated with absorption means, filtered, decanted and centrifuged.—J. F. O.

Process for the Preparation of Tanning Extracts from the Waste Liquor of Sulphite Pulp. Max Honig and Walter Fuchs. Aust. pat. 125,675 (July 14, 1931).—The original lignin sulphonic acid can be changed into pure tanning acids through the addition of alkali or alkaline earths at a specific pH of 9.0 to the cooking liquor. This mixture is allowed to react for one hour in order to separate the calcium oxide, and also the aldehyde sulphurus acids bound to the organic substances as an insoluble calcium sulphite.—J. F. O.

Process to Obtain Concentrated Waste Liquors from Acid or Alkaline Cooking of Pulps. B. N. Segerfelt. Swed. pat. 73,406 (March 23, 1927).—The most concen-

trated waste liquor from the diffusers or other devices for the washing of the pulp, is used as make up for the fresh cooking liquor, in order to obtain the required amount of cooking liquor.—J.F.O.

Process for the Preparation of a Suitable Wort for Yeast Culture from Sulphite Waste Liquor or other Solutions Obtained from Wood Containing Sugars. Vereinigte Mautner-Markhof'sche Presshefe Fabriken. Aust. pat. 125,163 (June 15, 1931).—While the waste liquor is still in a warm condition, it is neutralized and aerated. The materials are added in such quantities so that the liquor remains alkaline to litmus paper after the aeration and subsequent settling. Finely divided calcium carbonate, lime stone or caustic sludge from the sulphate process is added in stages as the neutralization means.—J. F. O.

Miscellaneous Pulping Processes

Nitric Acid and the Decomposition of Wood. A. Schaarschmidt and P. Nowak, Berlin Technical University. Cellulosechemie 13, No. 8/9:143-149 (Aug. 7, 1932).—Wood chips of red beech were cooked with dilute nitric acid of various concentrations. Using 8 per cent nitric acid for 60 to 30 minutes at 100 deg. C. gave 42 to 49 per cent of cellulose free from lignin which was easily bleachable after treatment with 1 per cent caustic soda. The decomposition takes place at 66 to 70 deg. C. The waste liquor contains oxalic and acetic acids. Ten grams of wood are decomposed with 3.97 grams of nitric acid. The tests were carried out in a rust-proof steel vessel.—J. F. O.

Investigation of the Cooking Liquor for Linen. M. M. Tschilikin. Cellulosechemie 13, No. 2:36-38 (Feb. 7, 1932).—J. F. O.

Recovery of Parchmentizing Sulphuric Acid. Feldmuhle Papier and Zellstoffwerke Aktiengesellschaft, Stettin. Ger. pat. 551,165 (May 19, 1932).—The waste acid is first evaporated in open pans and then bleached by treatment with manganese dioxide. The concentrated acid while still hot can be filtered through a bed of manganese dioxide.—J. F. O.

Process for the Separation of Particles Rich in Resin in the Manufacture of Stock from Pine Wood. A. Lampen. Nor. pat. 50,221 (Nov. 29, 1930).—The wood is treated with ultra violet rays and each part that fluoresces is removed.—J. F. O.

Process and Arrangement for the Cooking of Pulp. A. E. Nielsen, Nor. pat. 50,044 (Nov. 23, 1928).—J. F. O.

Beating

Charts to Aid in the Operation of a Beater. W. Brecht, R. Trenschel and W. Bachmayer. Wochbl. Papierfabr. 63, No. 23A:46-51 (June 4, 1932).—In the selection and operation of a beater, the making and use of charts is more advantageous than the use of construction data. Curves are plotted showing the effects of the various factors influencing the economic operation of the beater.—J. F. O.

Concerning the Beating Process in a Beater. K. G. Jonas and P. Schlechter. Wochbl. Papierfabr. 63, No. 23A:42-46 (June 4, 1932).—Numerous experiments were carried out in an experimental beater with 4 and 6 per cent consistency and at different peripheral speeds. The distance between the roll and bed plate was regulated to within 0.002 millimeters. Tests were made on the different pulps to show the influence of accurate adjustment of the roll and these results were reproduceable.—J. F. O.

Hastening the Formation of Cellulose Slime in the Beater. Carl G. Schwalbe. Papier-Fabr. 30, No. 23: 350-54 (June 5, 1932).—The author describes ways for forming cellulose slime and evaluates each method. The use of grape sugar has the best possibilities.—J. F. O.

Investigations on the Beating Process. Michimaro Nakno. Papier-Fabr. 30, No. 22:337-40 (May 29, 1932).—The following factors were studied; the influence of the temperature and time on the beating of the stock, concerning the measurement of the water of imbibition, various investigations with beaten stock, relation between beating time and the true beating degree, moist and dry stock, degree of beating and copper number, the action of various reagents on the beating, and the beating action on the viscosity of the stock. The author claims that the same test for the degree of beating is possible with short fibers and low hydration, as with long fibers and much hydration. No relation between the degree of beating and the copper number was found. The viscosity increases during the beating, presumably because of the mechanical diminution of the fiber micellar.—J. F. O.

Excessive Use of Sized White Waters for Charging Beaters. Anon. Papeterie 54:889-890 (Aug. 25, 1932).—A brief discussion of the reactions which may take place in the beater through addition of sized white waters, showing how they can interfere with proper sizing of the paper.—A. P.-C.

The Action of the Beater. James Strachan. Paper Maker & Brit. Paper Trade J. International No.:7 (1932).—A brief discussion of the action of the hollander on fibers, indicating the difference from the action of the rod mill and refiner and forecasting the probable major improvement in hollander design.—A. P.-C.

Centrifuge for the Beating of Fibrous Materials, Especially in the Manufacture of Paper. Andreas Biffar. Ger. pat. 548,034.—J. F. O.

Process and Arrangement for the Defibering and Beating of Pulp and Similar Substances. Karl Hellner. Fin. pat. 13,794 (Dec. 7, 1929).—The defibering and beating takes place in a horizontal, rotating enclosed cylinder.—J. F. O.

Pulping Machine. William G. Fraser. U. S. pat. 1,869,243 (July 26, 1932).—In a pulping machine having a conical body and a number of arms or blades rotatably mounted on the shaft, the arms within or adjacent to the feed hopper at one end of the casing are replaced by a worm device to ensure continuous transfer of the material into the conical body of the machine. The arms are mounted on bosses secured to the shaft, and in order to prevent accumulation of strings or other material in the spaces between the bosses, tubular elements of the same diameter as the bosses are placed around the shaft between the bosses so as to close up the spaces completely.—A. P.-C.

Beater Engine. Frank J. Grathwol and John E. Grathwol. U. S. pat. 1,873,839 (Aug. 23, 1932).—A tank, provided with one substantially vertical end wall and the other end wall having an upper vertical portion joined to the bottom by means of a smoothly curved portion, is divided into an upper and a lower compartment by means of a horizontal partition terminating short of the end walls. In the top compartment are two parallel shafts carrying radially projecting arms which, during rotation of the shafts, interlock without interfering with one another; Coacting with each set of arms is a concave block provided with grooves inclined at an angle to the shaft. The position of the blocks is adjustable to permit of regulating the clearance between each block and the coacting arms. A similar device is mounted in the lower compartment.—A. P.-C.

Jordan Engine. John D. Haskell assignor to Dilts Machine Works. U. S. pat. 1,873,199 (Aug. 23, 1932).—The jordan is constructed considerably smaller than usual

so that it may be operated at peripheral speeds of 6500 to 13,000 ft. per min. at the large end of the plug. In order to prevent overheating when operating at such high speeds, the whole casing is water-jacketed. In order to control the pressure generated by centrifugal force, a pressure gauge is provided on the discharge outlet, below a weighted relief valve.—A.P.-C.

Recovering Heat in Beaters. Establissements E. et M. Lamort Fils. Belg. pat. 385,518 (Feb. 29, 1932).—The heat generated in the beater is used to warm up freshly introduced stock, the heat exchange being carried out in a closed circuit.—A.P.-C.

Treatment of Fibrous Material Prior to Beating. Logan A. Dils assignor to Kellogg-Dils, Inc. U. S. pat. 1,868,569 (July 26, 1932).—Material such as hemp or flax straw or bagasse is treated with an aqueous solution of borax, caustic soda and trisodium phosphate, in order to prepare it for beating.—A.P.-C.

Paper Making Stock from Printed Paper. Logan A. Dils assignor to Kellogg-Dils, Inc. U. S. pat. 1,870,358 (Aug. 9, 1932).—Finely shredded printed paper is beaten at atmospheric pressure in a hot solution containing caustic soda, sodium borate, trisodium phosphate and potassium carbonate, and the beaten material is washed.—A.P.-C.

Beating Engine. Burke M. Baxter. U. S. pat. 1,878,661 (Sept. 20, 1932).—In a Horner type beater the bottom is made of concrete and the side walls of metal or wood. The radii of the turns are made larger than usual to eliminate or minimize lodgment of stock therein. The midfeather is displaced to one side, making the channel narrower on the side on which the stock leaves the beater roll than on the side on which it is fed to the roll, so that the amount of pulp flowing through a given point of the trough at any time is the the same throughout the whole length of the trough.—A.P.-C.

Treatment of Semi-Cooked Wood Pulp. Charles E. Smith assignor to Mead Paperboard Corp. U. S. pat. 1,879,560 (Sept. 27, 1932).—Wood which has undergone incomplete digesting by a semi-chemical cook is completely disintegrated by mechanical treatment in rod mills. The latter are arranged in line with their longitudinal axes parallel, and the inlets and outlets of the several mills are in alignment, so that they may be fed simultaneously by means of a conveyor travelling above the inlet ends of the mills. Each rod mill has associated with it a compartment receiving the semi-cooked chips from the conveyor. In each of the receiving compartments is a screw conveyor for positively feeding the material into the rod mill, the screw conveyor being driven in co-ordination with the rod mill.—A.P.-C.

Method of Evaluating and Controlling the Degree of Beating of Pulp. Carl Büchner assignor to Papyrus A. G. U. S. pat. 1,876,563 (Sept. 13, 1932).—The invention provides a method for directly observing the degree of beating continuously at the paper machine and (if desired) for regulating it automatically. The water passing through a given portion of the wire near the breast roll is measured continuously. Variations in the amount passing through gives a measure of the variation in the beating and may be used for adjusting the position of the jordan relatively to its casing so as to maintain a constant quality of pulp coming from the refiner.—A.P.-C.

Bleaching

Contribution to the Knowledge of the Bleaching process. Joseph J. Weiss, Tech. Chem. Papier Zellstoff Fabr. 28, No. 6:81-86 (Nov. 28, 1931).—An elaborate elucidation of the kinetics of bleaching of wood pulp. Many equations, mathematical formulas and tables accompany the article.—J. F. O.

Bleaching Studies on Wood Pulps. Part V. Concerning the Influence of the Procedure of the Bleach Process on the Chemical-Physical Properties. Hermann Wenzl. Tech. Chem. Papier Zellstoff Fabr. 27, No. 2/3:17-37 (March 29, 1930).—The author first reviews recent literature discussing the important facts therein. Chlorates also have a bleaching action and are decomposed in the first 15 minutes of the bleaching process. But chlorides are a total loss. A description of the plan of study is given and then the procedure and methods. The degree of cooking of the pulp is of great importance in the bleaching. The bleaching process is a combination of further decomposition and chlorination. the incrustants being chlorinated. There is a great difference between the activity of the hypochlorous acid salt of sodium and calcium, in bleaching with hypochlorite under normal alkalinity. The sodium hypochlorite has many advantages over the calcium salt. Numerous curves and data accompany this article which is almost an exhaustive treatise on this subject.—J.F.O.

Bleaching Pulp. Harold Skinner. Paper Mill 5, No. 31:4, 6, 14-15 (July 30, 1932).—A brief discussion of the principal factors governing efficient bleach manufacture and efficient pulp bleaching.—A.P.-C.

Systems of Pulp Bleaching. James Strachan. Paper Maker & Brit. Paper Trade J. 83:TS201-202 (June 1, 1932).—A brief discussion of the different bleaching processes.—A.P.-C.

The Deterioration of Wood Pulp in Bleaching. James Strachan. Paper Maker & Brit. Paper Trade J. 84: TS225-226 (July 1, 1932).—A brief discussion of bleaching conditions which affect the quality of wood pulp, showing the necessity for close control required to preserve its permanence and durability.—A.P.-C.

Direct Chlorination as an Aid in the Bleaching of Sulphate Pulp. John D. Rue and James S. Sconce. Paper Trade J. 95, No. 17:54-62 (Oct. 27, 1932).—A two-stage laboratory bleaching process has been developed: the first stage consists of direct chlorination for 5 min., alkalizing with lime and allowing the remaining available chlorine to exhaust; the second stage is a typical hypochlorite bleach. The process has been developed on a commercial scale.—A.P.-C.

Report of the Investigations of the Standardizing Committee on Methods of Control in the Determination of the Degree of Bleaching in Wood Cellulose. Gösta Hall, Ivar Klinga, Gunnar Lindstrom, Carl Palm and Yngve Sundblad. Svensk Pappers-Tidn. 35:478-488, 510-519, 542-548, 578-589 (1932).—Existing methods have been compared and the data are shown in 16 graphs and 26 numerical tables. The Bergman number (chlorine used calculated in per cent of the weight of the pulp) is judged the most indicative. The committee has devised a new permanganate method claimed to be of sufficient accuracy as well as quick and convenient, which is a combination of the Bjorkman and Bergman methods. For bleaching with chlorine gas the Roe method improved by Johansson is especially suitable, particularly with sulphate pulps.—C.J.W.

Bleaching of Groundwood. W. Hirschkind. Paper Trade J. 95, No. 19:31-32 (Nov. 10, 1932).—A discussion of the advantages of hydrosulphites for bleaching groundwood.—A.P.-C.

Treatment of Chemical Pulp. George A. Richter and Milton O. Schur assignors to Brown Co. Can. pat. 325,487 (Aug. 30, 1932).—Raw sulphite pulp is treated at room temperature with a solution containing 0.5 to 1.0 per cent caustic soda based on the weight of the air-dry pulp. The pulp is washed and bleached in a distinctly alkaline bleach liquor.—A.P.-C.

Hazards of Inrunning Nips on Paper Machines*

In any group of pulp and paper mills, approximately 20 per cent to 25 per cent of the lost time accidents that occur over a period of time are charged to the paper machine section. Injuries received from paper making machinery are usually much more severe than the average recorded accident. They inflict, more often than not, partial permanent defects such as loss of fingers, crippled hands, arms, etc., causing a great deal of suffering and loss of time and contributing a good portion of our compensation and medical costs. Accident prevention on paper machine operation has long been a problem, not only because of the heavy machinery but the method of constant speed operation of a number of sections as a unit and the nature of the product which, in its course over the machine, is carried by or between rolls causing inrunning nips which are very difficult, and in some cases impossible, to guard without interfering with the manufacturing process.

It is the object of this report to deal with guards, mechanical devices and safe operating practices which will tend to prevent accidents at inrunning nips on paper machines. The material we have to present is a result of information asked and received from members of the Pulp and Paper Section of the National Safety Council. It contains definite information concerning guards and devices that are the product of the ingenuity of these various paper mills in their efforts to prevent the recurrence of accidents that have happened either at their own plants or within their experience. We must bear in mind that anyone of these guards or devices was designed to meet the conditions of some one plant and which may or may not be adapted in its entirety to the same point of operation in some other plant, due to the various ages and types of paper making machinery. The idea is there, however, and will open up possibilities or suggestions that will help us develop a variation which will fit our own local plant and equipment conditions.

The committee feels that, although a good portion of the material in this report is not new to the industry, if it does no more than help to renew the interest in accident prevention on paper machinery, we shall be well repaid for our efforts. It was the general opinion of those who answered the questionnaire that there are no hazards involved at the inrunning nips formed at the breast roll, water marker rolls, dandy roll and tube rolls. These points are guarded either by location or machine equipment. While this is true to the extent that no crushing injury may possibly be received, we have had finger scratches from the paper machine wire at these points and, due to its composition of copper and bronze, very often a minor scratch develops into a bad infection if not properly treated. For this reason, paper machine employees should be impressed with the extreme importance of first aid for wire scratches.

Paper Carrying Roll (Adjacent to Suction Couch)

Accidents at this point are rare but there is a hazard due to the nearness of this roll to the suction couch roll. Accidents that have occurred caused a crushing injury to the arm when the rotary motion of the suction couch drew the injured's arm down between the two rolls. It is a common practice when taking the paper over the machine by hand to lift the front end of this roll from an open bearing until paper is started over the first felt. The hazard can be eliminated somewhat by the use of an automatic air or steam device for blowing the tail of the paper over onto the felt.

A device which has been installed on a number of machines consists of a counter-weighted bearing on a pivot. The counter weight forms the lower part of the bearing extending below the roll and is made heavy enough so that the carrying roll will not move unless some obstruction, such as a man's arm, becomes inserted between the suction couch roll and the carrying roll. This will cause the carrying roll to pivot forward increasing the space and preventing any crushing injury.

Couch Rolls and Press Rolls

Couch rolls and press rolls are considered by the majority of safety engineers as being guarded by location or by the machine frame. It is true, however, that, should an injury occur at any of these nips, it would undoubtedly be very severe. While couch rolls and press rolls cause what is probably the most dangerous looking inrunning nips on the machine, the reason for the scarcity of injuries is probably due to the fact that it is unnecessary for operators to do any adjusting at this point. Doctors are provided to take any stock off that may be sticking to the rolls, and felts cannot be straightened by pulling just before the press nips.

For those machines on which the press nips are not protected by location, or machine frames, a wire mesh guard may be installed. This should be made easily removable, however, so as not to interfere with washing or arranging felts.

Accidents from nips will be less likely to happen at this point by equipping all footboards across machine with handrails on the side next to the press and by making the walking surface of these footboards non-slip. This may be done by covering with some non-slip material. The principle objections to a covering is that it materially increases the weight of the footboard making it difficult to handle if necessary to remove and the fact that if the covering is metal, rust scales are apt to get into the paper. One plant has put a diamond shape groove about a quarter of an inch deep on the surface of all press footboards, which acts quite well as a non-slip surface. If the conditions warrant, it is sometimes advisable to put a toe board on the railing side of the footboard. Steps on the machine frame leading to press footboards wear smooth with use. These steps should either be kept roughened or covered with a non-slip material to prevent employees being caught in the nip by slipping. I have seen machines that have no steps at some presses, causing employees to step on pipes, machine frames, etc., and inviting accidents.

Another hazard around presses, which is not attributed to inrunning nips but is common enough to mention, is that of foot injuries resulting from press weights falling or slipping off weight lever. The practice of going barefooted is still prevalent in some plants, which only increases the severity of injuries from this cause. A device to overcome this hazard consists of notching the weight lever, and slotting the weight to fit the notches which will keep the weight from slipping even though the weight lever does slant downward. Weight levers should be long enough to accommodate necessary weight to do away with placing weights on top of each other and tying on with pieces of rope.

* Report presented before the meeting of the Paper and Pulp Section of the National Safety Council at the Twenty-first Annual Safety Congress, Washington, D. C., by G. J. Adams, International Paper Co., Chairman; J. Plzak, Consolidated Water Power & Paper Co.; K. L. Faist, Champion Coated Paper Co., Committee on Hazards of Inrunning Nips on Paper Machines.

Wet Felt Carrying Rolls

Nips formed by the wet felts and the felt carrying rolls are responsible for numerous accidents ranging in severity from finger bruises to fatalities. The principle operating practices which result in accidents here are (a) trying to straighten felt wrinkles while running, (b) pulling edge of felt to keep it from running to one side of the machine, (c) reaching the hand in to scrape off stock from one of the felt carrying rolls, (d) pulling and turning felts when washing up.

Quite often, especially on older machines, a felt will run to one side or the other or develop a wrinkle. In order to save shut down time, it is customary for the machine tender to help straighten the felt by pulling at edge with the machine necessarily at full speed. The danger of this can be seen when pulling is done close to the pinch of the carrying roll (which is the place where pulling is the most effective). Modern automatic felt straighteners are a decided help in preventing accidents from this cause. Stock from the second felt sometimes sticks to the first carrying roll after the second press. The danger of employees reaching in to scrape this stock off with their hand can be eliminated by installing a wooden ductor across the width of this roll, the ductor being shaped so as to drain any water and stock scraped from the roll off to either the back or front side of the machine.

The most common causes of injuries at felt carrying rolls occur when felts are being washed and turned. During this operation there are several safe operating practices that should be adopted. Felts should be pulled away from the inrunning nip. Footboards with non-slip surfaces should be provided across the pit where needed and should be located so that employees using them will be pulling and turning the felt away from the nip. During this operation, an employee should be stationed at the clutch lever so that speed may be controlled and clutch struck out quickly in case of accident.

Even with all these precautions, the following accident is typical of the problem at this location: During a wash-up, it was necessary to turn the second felt. The walkway provided for this work is located correctly so that employees are pulling felt away from the nip instead of toward it. In this particular case, the injured employee stepped up onto the walkway with the idea of helping the two men working there to turn the felt more quickly. He reached through to the other side, pulled felt up toward the pinch (which he knew would turn it more quickly), his hand was caught in a fold of felt and his hand and arm drawn up into the nip, resulting in a compound dislocation of the shoulder and a fractured arm.

Felt wash rolls and squeeze rolls are not considered hazardous. However, one member stated that by counter weighting the squeeze roll, it will rise in case a pinch does occur.

Baby Drier Roll and Drier Section

When the equipment on the drier frame does not provide protection, a short rail should be installed across the open space on the front side between the baby drier and the first top drier. The platform used by the backtender when taking paper off the last press and starting it over the driers is usually high enough so that should he lose his balance and fall into the space inside the baby drier, a fatal accident would very probably result. Very often a pipe rail or bar is extended across the width of the machine in this space. The nip formed by the felt carrying roll against the first bottom dryer can easily be guarded by building a solid barrier protecting employees in space between dryer section and press section.

Another hazard is encountered when sewing drier felts on top of the drier section. An accident occurred here when somebody threw in the drier clutch without knowing this work was being done. This caused the employee on top of the driers to be carried by felt down into the space between baby drier and first drier. A wooden movable working platform should be provided across the top of the driers. If thought necessary, some sort of a barrier can be constructed across the lower end so as to prevent an accident such as the above. In addition to these precautions, the drier section as well as all other drives should be controlled by a definite, danger tag system when repairs, oiling, etc. are being done during any shut down period. Another frequent cause of accidents on the drier section is when operators, while taking paper over the machine by hand, get hands and arms caught between drier felt and drier causing varying degrees of injuries from slight bruises to loss of arms. This danger is not so prevalent on machines equipped with the "rope backtender," which takes the paper automatically over the section, eliminating almost wholly the hazards of this operation.

Smoothing Press Rolls

Smoothing press rolls offer a problem when no automatic carrying device is used to put the paper into the nip. Several members reported accidents at this point and each accident resulted in a serious injury such as loss of an arm. So that the backtender need not be exposed to the hazard of putting the sheet by hand from the last felt press to the smoothing rolls, a rope carrier may be provided. If the dryer section is not equipped with a rope carrier, this may be installed separately on the smoothing press. To make the operation at this point still more safe, the rotation of these rolls may be reversed so that the in-running nip is on the side next to the drier section. The paper is taken over the top roll, into the nip from the reverse side, down over the front of the bottom smoothing roll and onto the first dryer. This does not reverse the wire side of the sheet so should not be objected to as an operating practice.

If the rotation of the smoothing rolls is reversed, it is necessary to provide some device behind the press to guide the paper into the nip, if dryer section is not equipped with rope backtender. This may be done by a simple arrangement of a 2" duck belt arranged on wooden spools. The belt is installed laying against and following the contour of the top roll to almost the point of the nip, carrying the paper to this point where it is caught between the rolls. Another simple device consists of a guide made of galvanized iron on the back and following the direction of the top roll down to the nip. On machines where the smoothing press is only occasionally used, the galvanized iron guide is probably better as it may be easily adjusted to allow the paper to by-pass the press by taking over the top roll and directly down onto the first dryer.

Paper Machine Calender Stacks

The majority of calender stack accidents consist of crushed fingers and hands. One of the principle hazards is encountered when the back tender has to feed the paper through from the dryers to the stack by hand and in the operation gets his hand too close to the in-running nip which usually crushes the ends of the fingers. This hazard can be overcome by equipping the machine with an automatic air feed which blows a tail of the sheet along a galvanized iron chute into the nip. This equipment, like other automatic feeds and carriers is a necessity on the newer type high speed machines.

Feeder belts should be provided on stacks where paper goes over the top roll and into the nip on the side next to the reel. In feeding very heavy weight sheets, such as board, through the stack, it is advisable to use a wooden stick with a rounded end for pushing the sheet into the nip. This can easily be made from a piece of old broom handle about 7" long.

Another common cause of calender accidents is when operators grab at wads while having breakdowns or while paper is being fed through the stack. The rolls rest one on top of the other in bearings that are movable vertically and a wad of paper causes the rolls to jump, very often catching the fingers on the hand of the operator who had grabbed at the wad at the same moment. Any guard yet devised that stretches across the machine in front of each nip has proved impractical, interfering with the process, except possibly on very slow machines usually making a heavy grade of paper. However, each ductor should have either the metal finger attachment or air ducts which help to guide or blow the paper through the rolls. Probably no other piece of equipment in the industry is a better illustration that the calender stack of the need for training employees and continued supervision for the prevention of accidents.

Another frequent cause of crushed fingers in the calender rolls is when the operator attempts to use his metal hand scraper to remove a spot from one of the rolls, the rotation drawing the scraper and his fingers into the pinch at the slightest inattention or slipping of the scraper. This type of injury can be prevented by using a scraper constructed with a wooden handle with metal finger guards with the blade of the scraper inserted in such a way as to pull out from the handle if caught by the pinch, the finger guards protecting the operator's hand. When a backtender climbed up and stood on a ductor to scrape a spot from a calender roll, his foot slipped and his toes were caught and crushed in the nip. Working platforms should be constructed in front of the stack if at all practical. A handrail should be provided if possible. There are a number of purposes for the use of such a platform.

One plant provided a platform but found it impractical of one of the backtenders, a handrail was put across and atached to one of the ductors that at least provided a safe handhold. Note also as on other parts of the paper machine that stack steps should be of rough surface or covered with some non-slip material.

Air hoses for use around stacks should be equipped with nozzles so that the end of the hose is less liable to be caught in the nip. Injuries were reported at this point when the nips caught parts of clothing, pieces of rope and other materials that operators had in their hands. If air pipes are used on the stack, they usually provide necessary protection against injury in the lower nips on the side next to the driers. Where there are no air pipes, a simple and effective guard is a board of necessary width and long enough to stretch the width of the stack suspended in such a way as to be easily removable in case of repairs.

Reels

Stacked reels form a very serious hazard, any injuries at this point almost always resulting in a fatality when the space between the reels becomes small enough, due to getting behind on the winders, to form a very dangerous inrunning nip. The best solution to this problem is to do away with stacked reels. This is not always possible, however, due to old mill designs not providing enough space to set the winder ahead for the necessary change. If stacked reels must be used, a good device is an adjustable bar (ordinary pipe rail) stretched across the width of the reels between the rolls so as to provide a stationary surface in case an employee did get caught he would not be drawn into and crushed between the rolls but would get off with a comparatively slight injury. In addition to this, it is also safe operating practice to have a rule that in case the reels approach within 4 inches of each other, the paper should be broken down at the wet end until by unwinding, the reels are at least 6 inches apart.

Hands and arms are often caught and crushed when operators are putting paper on English type reels by hand. This hazard can be eliminated by installing a device which blows a tail of the sheet onto the reel by compressed air, the tail being guided by the air along a galvanized iron chute. English type reels should be guarded at the end of the reel drum so that operators will not come up against a moving surface while doing their work. If steps are provided over the drive on the backside, a handrail next to the reel should also be installed.

Slitters

No satisfactory guard has yet been devised for slitter blades on types of winders similar to the Warren winder. This is due to the fact that the diametric measurement of the slitters varies according to the number of times they have been grounded. Slitter accidents are numerous, resulting injuries often being severed tendons of fingers which usually cause a permanent partial compensation case. One type of guard that is probably better than none consists of a strip of metal about 1½ inches wide fastened to the slitter standard and curved so as to protect against direct contact with the edge of the slitter knife.

Accidents which occur when employees engage or disengage the slitter knife against the bottom driving slitter may be decreased by using a stick for this purpose. This stick is used from the front of the winder and makes the operation not only safer but also easier. It consists of a piece of thin hard wood of necessary length, tapered at the end, which is inserted at the side of the slitter causing it to disengage by the leverage it supplies against the spring in the slitter. The opposite operation, of engaging the slitter blade, is then done by simply removing the end of the stick. It may be kept always handy for use by fastening it with a small round iron loop to one of the frame standards which stretch across the winder. Enough sticks should be supplied to take care of as many slitters as are in use at any one time.

Winders

The type of accidents which occur at inrunning nips on winders are common enough to all to forego any descriptions. There is no doubt that some form of a guard is needed and should be provided at this point. The usual form consists of a wire mesh frame stretched across the face of the winder, a number of variations of installation being used, depending on the type of winder and the method of handling the paper rolls. The small drum on the Warren type winder is usually covered with a curved metal guard that moves automatically as the roll of paper increases in diameter, leaving only a small space in which an employee may get caught between the drum and the roll of paper. The protection afforded by this metal guard is insufficient, however, and there are several ways of decreasing the hazard. One is by attaching to this metal drum cover on the edge next the nip, a strip of 2 inches or 3 inches of angle iron.

Also the wire mesh, angle iron, frame guard may be used here. It is usually made about 15 or 18 inches wide and extending the width of the winder with the bottom

part attached to a length of ordinary iron pipe which is attached at each end to the winder frame allowing operators to swing the guard up or down, depending on whether the winder is running or not. This same guard with slight adaptations may also be used on the type winder that has two drive drums of the same size. It is necessary to adjust this guard so that it will not rest against the roll of paper at any time while the roll is coming up. On very heavy grades, the guard may rest against the roll by means of small wheels which turn with the rolls.

On Cameron winders making small counter rolls of wrapping paper which are approximately 8 inches or 10 inches in diameter, a good guard may be used without interfering with the operation by using a curved wire mesh frame which is attached to riding roll frame and swings down covering both the siding roll and the roll of paper protecting employees against the nip. This should be of size sufficient to cover the paper roll when it is at its maximum diameter because it automatically rises with the riding roll as the paper roll increases in size. Ordinary Cameron winders may be guarded by a wire mesh frame which swings down from overhead, using a counter weight to hold it in place. The methods of removing rolls of paper from the winder will govern whatever adaptation is used of this type guard. Cameron winder manufacturers supply a guard with their modern machines. This consists of a wire mesh frame which when not in use is pushed down and held by clipbars. It is also counterweighted to hold it in place when in use. Employees should be warned on high speed Cameron winders not to brake winder when the riding roll is up as there is a possibility of the roll of paper jumping if the riding roll is released before the brake is applied. Shaving holes, when located in front of the winder as is the case usually with a Cameron, should be guarded.

A number of winder accidents have been caused by the poor condition of the floor directly in front of the winder when an employee stumbled in some depression or other triping hazard and lurched into the winder. The practice of using rope on winder shafts to prevent rolls from slipping is still common in a good many plants and is the cause of severe if not frequent injuries. A number of safety collars have been devised to do away with this practice but this is a real problem due to the variety of sizes of shafts, (split shafts and solid) types of winders and nature of product.

Probably the most practical collar yet in use consists of a bronze collar which when the roll is large enough on core is shoved over from its position on the shaft riding outside the end of the drum. Against this collar, a bronze yoke is held by means of a shaft which extends from the yoke through a slot in the top of the winder shaft bearing where it is held firmly by means of a set screw. This collar may be adjusted without stopping the winder. If the winder can be stopped, it is an easy matter to fasten a collar in place on the shaft against the paper roll. However, on machines that made different grades and which for a number of reasons should not be stopped during the winding operation if possible, some type of collar such as the above should be used. This same collar may be adapted to use on a split shaft.

Super Calenders

The fact that when the operator is feeding the sheet through the super calenders, the speed of the stack may be varied and run slowly, allowing us to guard the nips where they occur on both sides of the stack. This has almost wholly done away with the frequent pinched finger type of injury that was constantly occurring at this operation. The guard which is now in quite common use is usually an angle iron stretched across the nip the width of the calender stack, the ends attached to the stack frame in such a manner as to be easily removable in case of repairs. The space between the angle iron and the roll is wide enough to permit the passage of the paper but not wide enough to let the fingers through where they will be caught in the nip.

One plant has developed a curved stick for operators to use to feed the paper through the stack roll. This stick is hard wood with a leather facing curved to correspond to the surface of the rolls and equipped with a handle. Supercalender winders should be guarded with some adaptation of one of the several types of paper machine winder guards as the nip here is just as dangerous as on a paper machine winder.

Rotary Cutters

The squeeze rolls on a rotary cutter may be guarded by a pipe bar, similar to the method of guarding a nip on the supercalenders. A typical accident at this point occurred when the shaving guides were not properly placed and the shavings, instead of dropping to the floor, engaged and wound through the squeeze roll. The operator, rather than shut down, grabbed at and tried to pull the shavings out. His fingers were caught in the squeeze roll and two fingers had to be amputated at the second joint. If a platform is constructed across the top of the cutter, it should be equipped with a standard handrail. Also, if it is close to the rotary knife, a toe board should be installed on the side next to the knife. A barrier guard of some kind such as wire mesh should also be installed at the ends of the knife to prevent employees on the floor from reaching up around the knife while in motion.

Plants where paper machines are run by electric power have adopted the use on some drive sections of emergency stop buttons in case of accident. An illustration of this is an emergency stop button on the drier section. The button is located on the front side of the drier frame and is used only in case of an emergency to shut off power. Another plant had the experience of an employee falling down through the broke hole at the calender stack into the broke beater which was located directly underneath. Besides installing possible guards (rails) against a recurrence, an emergency stop button was placed on the stack frame which, in case of a similar accident, would immediately shut off power driving the broke beater.

A good deal of thought should be given to the construction of guards on the drives and clutches on the backside of the machines. They should be easily removable and made in sections for convenient repairs, equipped with handles and have sections hinged to facilitate oiling, tightening of clutches, etc. It is also advisable to make them with a curved surface as a flat top of a guard is a very convenient place for employees to leave containers of grease, oil cans, bolts, old shoes and what not. Drier felt weights and other suspended weights either behind the machine or in the basement should be enclosed, as many a broken toe resulted from an improperly placed weight falling from its support by the machine vibration.

At different points in this report we have tried to emphasize the importance of keeping equipment in good condition around the machines as a help to prevent accidents. Steps, where worn smooth, should be covered with some non-slip material; bed plates around the stacks and winders also wear smooth and should be roughened, when needed; floors should be kept free from grease, oil, wrenches, pieces of pipe, etc.; hoses should be coiled when not in use, keep dryer spears on their hooks, provide suitable waste receivers and in general good housekeeping should prevail.

(Continued on page 48)

IMPORTS OF PAPER AND PAPER STOCK

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GLUE STOCK, ETC.

Hammel & Bennet, Black Eagle, Antwerp, 40 bls. glue stock; ———, A. Ballin, Hamburg, 50 bags bone glue.

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D. C. Andrews & Co., A. Ballin, Hamburg, 60 bags.

OLD ROPE

Bank of N. Y. Trust Co., Amer. Banker, London, 55 coils; ———, Amer. Banker, London, 85 coils.; Banco Coml Italiane Trust Co., Black Falcon, Rotterdam, 58 coils; E. J. Keller Co., Inc., Marengo, ———, 48 coils.

CHINA CLAY

———, Boston City, Bristol, 25 casks.

WOOD PULP

Castle & Overton, Inc., A. Ballin, Hamburg, 275 bls. wood pulp, 55 tons; Brown Bros. Harriman & Co., A. Ballin, Hamburg, 2400 bls. sulphite, 405 tons; Castle & Overton, Inc., Burgerdyk, Rotterdam, 965 bls. wood pulp; E. J. Keller Co. Inc., Pr. Roosevelt, ———, 348 bls. wood pulp; ———, Pr. Roosevelt, Hamburg, 324 bls. wood pulp; J. Andersen & Co., Delaware, Sarpsborg, 500 bls. sulphite, 101 tons.

ALBANY IMPORTS

WEEK ENDING JANUARY 7, 1933

Pagel Horton & Co. Inc., Taurus, Gefle, 4000 bls. sulphite; Price & Pierce, Ltd., Taurus, Skelleftea, 3900 bls. chemcial pulp; Pagel Horton & Co. Inc., Taurus, Sikea, 5700 bls. sulphite; Pagel Horton & Co. Inc., Taurus, Ornskoldsvik, 4500 bls. sulphite; J. Andersen & Co., Taurus, Hernosand, 6600 bls. sulphite.

BOSTON IMPORTS

WEEK ENDING JANUARY 7, 1933

C. F. Malcolm, Lancastria, Liverpool, 3 cs. tissue paper; F. S. Webster & Co., Lancastria, Liverpool, 6 cs. tissue paper; The Borregaard Co. Inc., Delaware, Hurum, 1344 bls. sulphate; J. Andersen & Co., Delaware, Hurum, 6000 bls. sulphite; J. Andersen & Co., Delaware, Sarpsborg, 1008 bls. sulphite; Brown Bros. Harriman & Co., Delaware, Sarpsborg, 43 coils old rope; Darmstadt Scott & Courtney, Pr. Harrison, Bombay, 125 bags pickers; ———, Pr. Harrison, Bombay, 157 bags pickers; E. Butterworth & Co. Inc., Amer. Banker, London, 41 bls. waste paper; Brown Bros. & Harriman & Co., Amer. Banker, London, 72 coils old rope, 26 bls. rags; Stone & Downer Co., Amer. Banker, London, 4 cs. gummed paper; Crocker Burbank Co., Amer. Banker, London, 165 bls. waste paper; ———, Amer. Banker, London, 54 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING JANUARY 7, 1933

J. Rosenberg, Ibukisan Maru, Kobe, 46 bls. rags; Chase National Bank, L. A. Christensen, Barcelona, 91 bls. fustians; J. Rosenberg, P. Maersk, Kobe, 64 bls. rags; Union Waste Co., P. Maersk, Kobe, 25 bls. cotton waste; Chase National Bank, P. Maersk, Kobe, 45 bls. rags; Chemical National Bank Trust Co., Examiner, Genoa, 316 coils old rope.

BALTIMORE IMPORTS

WEEK ENDING JANUARY 7, 1933

Mitsui & Co. Ltd., Tsuyama Maru, Nagoya, 50 bls. rags.

NORFOLK IMPORTS

WEEK ENDING JANUARY 7, 1933

Carolina Bagging Co., P. Maersk, Kobe, 800 bls. bagging; 1st Natl Bank of Boston, P. Maersk, Shanghai, 114 bls. bagging.

SAVANNAH IMPORTS

WEEK ENDING JANUARY 7, 1933

1st National Bank of Boston, Kwanto Maru, Shanghai, 250 bls. tares; ———, P. Maersk, Yokohama, 200 bls. bagging; ———, P. Maersk, Kobe, 200 bls. bagging; E. J. Keller Co. Inc., P. Maersk, ———, 400 bls. bagging; Manufacturers Trust Co., P. Maersk, Shanghai, 207 bls. bagging.

Emergency Unemployment Relief Drive

The Emergency Unemployment Relief Drive, which has been in progress for the last several weeks, will draw to a close on Tuesday, January 17, at which time the entire committee expects to have raised fifteen million dollars for unemployment relief in the City of New York.

The quota assigned to the Paper Division is $105,000.00. Adam K. Luke, treasurer of the West Virginia Pulp and Paper Company, Chairman of the Paper Division, advises that to date the Paper Division has raised $93,000 toward its quota, leaving approximately $12,000 to be raised by January 17.

A last minute appeal is now being made to the various individuals and companies in the Paper Division of the City of New York, to send in their contributions if they have not already done so. Companies which have already made contributions, are now appealed to to make additional contributions if possible, so that the remaining $12,000 required of the Paper Division will be raised.

Contributions should be sent to any one of the following Chairmen of the Paper Division: Adam K. Luke, West Virginia Pulp and Paper Company; Charles A. Gordon, Oxford Paper Company; Walter H. Stuart, Henry Lindenmeyr & Sons; Carlton B. Overton, Castle & Overton, Inc.; O. M. Porter, Kraft Institute; John J. Dillon, Geo. W. Millar & Co.; L. A. Chariton, International Paper Company; George W. Gair, Robert Gair Company and Richard E. Thibaut, Richard E. Thibaut, Inc.

Soft Rubber Bearings Applied to Machinery

Designed to interest every engineer and plant executive who has a bearing problem, an 18 page booklet on "Cutless Rubber Guide Bearings as Applied to Hydraulic Turbines" has just been published by The B. F. Goodrich Rubber Company, Akron, Ohio.

Written by R. E. B. Sharp, hydraulic engineer, Baldwin-Southwark Corporation, I. P. Morris division, Philadelphia, Pa., and profusely illustrated, the booklet goes exhaustively into the subject of Cutless Rubber Guide bearings for hydraulic turbines and presents material that should be valuable to anyone making a study of bearing problems in any field.

Subjects treated are: "Oil Lubricated Metal Bearings Present Difficulties Not Found in Water Lubricated Bearings"—"Early Uses of Rubber Guide Bearings in Hydraulic Turbines"—"Rubber Bearings Resist Abrasion to a Remarkabe Degree"—"Spiral Grooved Type Bearings"—"Segmental Type Bearings"—"Installation of Rubber Bearings in Existing Turbines"—"Amount of Lubricating Water Required for Cutless Rubber Bearings"—"Shaft and Shaft Sleeves"—"Cutless Rubber Bearings Capable of Sustaining Heavy Shafts With Minimum Oscillation"—and "Uses of Cutless Bearings Increasing."

There are now 42 hydraulic turbines with Cutless Rubber Bearings in operation, with an aggregate capacity of 514,010 horsepower. Shaft diameters vary from 7 to 31½ inches. Copies of the booklet may be obtained on request to the manufacturer.

Oswego River Power Control

FULTON, N. Y., January 9, 1933—Consummation of a contract between the Oswego Falls Corporation and the Niagara Hudson Power Company pending for several months has given the latter concern complete control of the three hydro-electric generating plants on the Oswego River at this place. The agreement became effective this week and gives the power company control of the entire rights on the upper dam at Fulton which are regarded as the most valuable in the city.

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, January 11, 1933.

Conditions in the local paper market are practically unchanged. While the prevailing demand for the various standard grades of paper is light, however, trading should become more lively in the near future, with the holidays and the inventory period out of the way. No radical price changes were reported during the past week.

The outlook for the news print market is uncertain, although efforts to stabilize the industry, which have been going on for some considerable time, are being continued. Production of news print paper in the United States, Canada and Newfoundland is being maintained in sufficient volume to take care of current needs.

Following the usual custom at this time of the year, operations in the paper board mills have been curtailed. Box board production proceeded at approximately 18 per cent of capacity during the past week. Prices are fairly steady. The fine paper market is exhibiting a stronger undertone. Business in the coarse paper market is irregular.

Mechanical Pulp

The improvement recently reported in the ground wood pulp market is fairly well maintained. Production, both at home and abroad, is generally being keyed to consumption. With accumulations not excessive, the industry is in a sound statistical position. Prices are holding to previously quoted levels.

Chemical Pulp

Steadiness prevails in the chemical pulp market, although the prevailing demand for domestic and imported grades is light. There are a number of inquiries for future account around, some of which should materialize into good orders. It is anticipated that paper mill interest will increase before many weeks are past.

Old Rope and Bagging

The old rope market continues quiet. Demand for both domestic and foreign old manila rope is restricted at present. Small mixed rope is moderately active. Old rope prices remain unaltered. The bagging market is somewhat spotty. While gunny bagging is going forward in fair volume, scrap bagging is rather dull.

Rags

Trading in the local rag market is listless. Domestic cotton rags are practically marking time. Paper mill demand is due to expand shortly, in the opinion of some observers. Roofing rags are in seasonal request. The imported rag market is still affected by the fluctuations of foreign exchange. Prices are strictly nominal.

Waste Paper

Despite the usual seasonal decline in demand for paper stock, the waste paper market is considered in a healthier condition than for some time past. Prices are generally holding up well. Offerings of some grades, including hard white envelope cuttings and strictly folded news, are scarce, resulting in firmness in quotations.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. While the prevailing demand for the various grades is listless, a resumption of active trading is expected before long, now that the festive season has ended. Despite keen competition, prices are fairly steady.

HAZARDS OF INRUNNING NIPS

(Continued from page 41)

We have dealt for the most part in this report with mechanical guarding of paper machines. While adequate guards are necessary, probably more to be desired in accident prevention is safe operating practices of employees. We are creatures of habit by nature in everything we do, including our work. Therefore, if we can influence our employees to form habits of safe practices, we will prevent many accidents.

To say that the dangers of a paper machine must be recognized by employees and they must work carefully is not enough. The sooner we forget the word "carelessness", the more practical our accident prevention program will become. Provide mechanical safeguards where possible and then instruct employees how to do the job properly and safely. This, together with supervision by a foreman who knows what proper instruction and supervision is, will prevent accidental injuries that are within our control.

Robins Belt Conveyors

The Robins Conveying Belt Company, manufacturers of material handling equipment, general offices, 15 Park Row, New York City, has just issued its new bulletin No. 82 entitled "Robins Belt Conveyors."

This book contains tables and charts for determining the capacity, speed, width, power and belt-ply of any belt conveyor, the tabulated data being in an unusually convenient form. There are numerous pictures from photographs of installations showing the application of belt conveyors to a variety of industries.

A copy of this new bulletin may be obtained upon request.

Lee Larimer Joins James H. Barry Co.

SAN FRANCISCO, Cal., January 7, 1933—Lee Larimer, formerly associated with the Zellerbach Paper Company as assistant advertising manager, has joined the James H. Barry Company, printers and publishers, 1122 Mission street, San Francisco, as sales director of the Creative and Commercial Department. With his varied experiences in the Graphic Arts, Mr. Larimer is well qualified to do outstanding work for those who require his services.

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, January 11, 1933.

BLANC FIXE.—The blanc fixe market is moderately active. Prices are holding to previously quoted levels. The pulp is offered at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are fairly satisfactory. The contract movement is well up to average. Prices are generally holding to schedule. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market is quiet but steady. Domestic standard ground is still quoted at 7 cents and finely ground at 8 cents per pound. Argentine standard ground is selling at 8 cents and finely ground at 8½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Demand for caustic soda is listless. Prices, however, are well maintained at former levels. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and the ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is fairly active. Contract shipments are moving in satisfactory volume. Imported china clay is quoted at from $10 to $15 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at mine.

CHLORINE.—Further strength developed in the chlorine market. Demand for this product is persistent. Producers announce a further advance in prices. Chlorine is now quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market only fluctuated slightly. The grades of gum rosin used in the paper mills are quoted at from $3.55 to $3.85 per 280 pounds, in barrels, at works; while wood rosin is selling at $2.60 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Business in the salt cake market is quiet. Prices are somewhat spotty. Salt cake is quoted at from $13 to $14; chrome salt cake at from $12 to $13 per ton, in bulk, at works; while imported salt cake is selling at from $13 to $14 per ton, on dock.

SODA ASH.—Steadiness prevails in the soda ash market, although the prevailing demand is light. Prices remain unchanged. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—The starch market is practically marking time, awaiting the end of the inventory period. Prices remain unchanged. Special paper making starch is quoted at $2.19 per 100 pounds, in bags; and at $2.46 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Trading in the sulphate of alumina market is light. Prices are holding to schedule, in most instances. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Supplies of talc are going forward in moderate volume. Prices are generally holding to schedule. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at mine; while imported talc is selling at from $18 to $22 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	38.00
Bonds	4.50	@	53.25
Index	6.00	@	12.00
Writings—			
Extra Superfine	6.50	@	15.00
Superfine	6.25	@	14.75
Tub sized	4.50	@	7.00
Engine sized	4.00	@	5.00
Book, Casco—			
S. & S. C.	4.25	@	5.00
M. F.	3.75	@	4.25
Coated and Enamel	5.00	@	9.00
Lithograph	5.00	@	9.00
Tissues—Per Ream—			
White No. 1	.50	@	.70
Anti-Tarnish M. G. only	.65	@	.70
Colored	.70	@	.90
White No. 2	.55	@	.60
Kraft	.65	@	.70
Manila	.55	@	.60
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.09¼	@	—
No. 2	.11¼	@	—
Bleached, basis 20 lbs.	.11¼	@	—

(Delivered New York)

News, per ton—			
Roll, contract	45.00	@	—
Rolls, spot	45.00	@	—
Sheets	50.00	@	—
Side Runs	30.00	@	35.00
Kraft—			
No. 1 Domestic	4.50	@	4.75
No. 2 Domestic	2.37½	@	2.75
Southern	2.25	@	2.50
Imported	2.75	@	3.50
Boards—per ton—			
News	30.00	@	32.50
Straw	29.50	@	31.50
Chip	24.50	@	30.00
Binders' Boards	62.00	@	70.00
Kraft Liner	40.00	@	45.00
Standard 85 Test Jute Liner	27.00	@	29.50
Sgl. Mla. Ll. Chip	37.50	@	40.00

(F. o. b. Mill)

Wood Pulp Boards	70.00	@	80.00

Mechanical Pulp

(On Dock)

No. 1 Imported—			
Moist	17.00	@	19.00
Dry	17.00	@	20.00

(F. o. b. Mill)

No. 1 Domestic	16.00	@	22.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	1.80	@	2.25
Easy Bleaching	1.60	@	1.75
No. 1 strong unbleached	1.35	@	1.60
Mitscherlich unbleached	1.55	@	1.75
No. 2 strong unbleached	1.25	@	1.35
No. 1 Kraft	1.25	@	1.40
No. 2 Kraft	1.10	@	1.15
Sulphate—			
Bleached	1.85	@	2.15

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—			
Bleached	1.75	@	3.75
Easy Bleaching	1.75	@	1.90
News	1.40	@	1.65
Mitscherlich unbleached	2.00	@	2.55
Kraft (Domestic)	1.25	@	2.75

(Delivered Paper Mills)

Soda Bleached	2.00	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White ,No. 1.	4.00	@	4.25
New White, No. 2.	3.00	@	3.25
Silesias No. 1	3.75	@	4.00
New Unbleached	5.50	@	6.00
New Soft Blacks	2.75	@	3.00
Blue Overall	3.00	@	3.50
Fancy	1.50	@	1.75
Washables	1.15	@	1.40
Mixed Khaki Cuttings	2.50	@	3.00
Pink Corset Cuttings	2.75	@	3.25
O. D. Khaki Cuttings	3.00	@	3.25
Men's Corduroy	1.00	@	1.25
New Mixed Blacks	2.25	@	2.50

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	2.25
White, No. 2—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.00	@	1.25
Black Stockings	2.00	@	2.25
Roofing Rags—			
No. 1	.53	@	.58
No. 2	.48	@	.53
No. 3	.43	@	.48
No. 4	.38	@	.43
No. 5A	.33	@	.38

Foreign Rags

New Rags

New Dark Cuttings	1.40	@	1.50
New Mixed Cuttings	1.60	@	1.75
New Light Silesias	3.00	@	3.25
Light Flannelettes	2.50	@	2.75
Unbleached Cuttings	4.75	@	5.25
New White Cuttings	4.00	@	4.25
New Light Oxfords	3.00	@	3.25
New Light Prints	1.85	@	2.25

Old Rags

No. 1 White Linens	5.25	@	5.50
No. 2 White Linens	4.50	@	4.75
No. 3 White Linens	3.25	@	3.75
No. 4 White Linens	1.75	@	2.25
No. 1 White Cotton	3.50	@	3.75
No. 2 White Cotton	2.75	@	3.25
No. 3 White Cotton	2.25	@	2.50
No. 4 White Cotton	1.40	@	1.50
Extra Light Prints	1.80	@	2.00
Ord. Light Prints	1.60	@	1.75
Med. Light Prints	1.40	@	1.55
Dutch Blue Cottons	1.35	@	1.40
French Blue Linens	1.80	@	1.90
German Blue Linens	1.70	@	1.80
German Blue Cottons	1.20	@	1.25
Checks and Blues	1.25	@	1.30
Lindsay Garments	.75	@	.80
Dark Cottons	.70	@	.75
Old Shopperies	.55	@	.60
New Shopperies	.60	@	.65
French Blues	1.25	@	1.30

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	.90	@	1.00
Domestic	1.00	@	1.10
Wool Tares, light	.70	@	.80
Wool Tares, heavy	.70	@	.80
Bright Bagging	.70	@	.75
Small Mixed Rope	.50	@	.60
Manila Rope—			
Foreign	1.35	@	1.40
Domestic	1.40	@	1.50
New Burlap Cut	1.00	@	1.50
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	1.70	@	1.80
Ordinary Hard White No. 1	1.55	@	1.65
Hard White No. 2	1.30	@	1.40
Soft White No. 1	1.40	@	1.50
Flat Stock—			
Stitchless	.55	@	.65
Overissue Mag	.55	@	.65
Solid Flat Book	.50	@	.55
Crumpled No. 1	.40	@	.45
Solid Book Ledger	1.50	@	1.75
Ledger Stock	.45	@	.55
New B. B. Chips	.20	@	.25
Manilas—			
New Env. Cut	1.25	@	1.35
New Cuttings	1.00	@	1.05
Extra No. 1 old	.80	@	.90
Print	.35	@	.40
Bogus Wrapper	.30	@	.35
Container	.25	@	.30
Old Kraft Machine—			
Compressed bales	.75	@	.85
News—			
No. 1 White News	1.00	@	1.05
Strictly Overissue	.50	@	.55
Strictly Folded	.35	@	.40
No. 1 Mixed Paper	.17½	@	.22½

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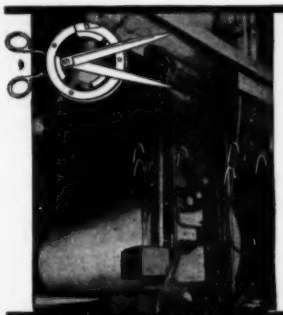

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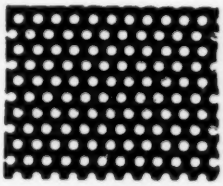
For Pulp and Paper Mills



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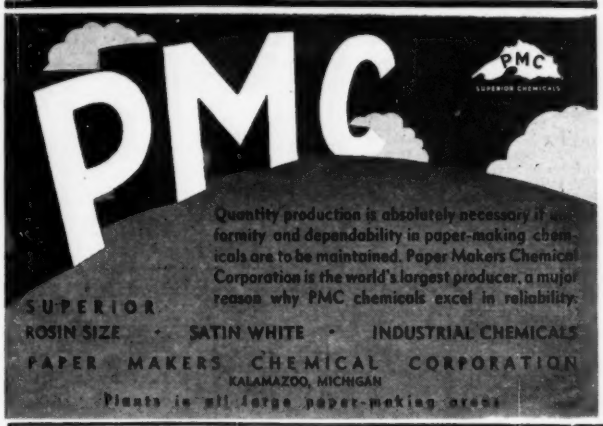
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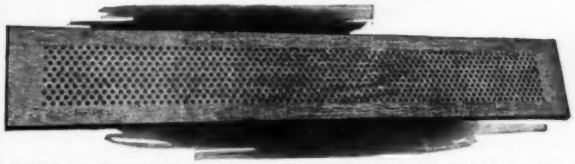

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HIGH SPEED NEWSPRINT, BOOK AND KRAFT PAPER WINDER. WIDTHS 180" to 262". ROLL DIAMETERS UP TO 40" SPEEDS UP TO 3000 F.P.M.
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CAMERON PATENTED METHOD WINDS ROLLS WIRE SIDE OUT IF REQUIRED
CAMERON MACHINE COMPANY 61 POPLAR ST. BROOKLYN, N.Y.

Twines
(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finished Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.11¼	@	.12¼
Tube Rope—			
4-ply and larger	.10¼	@	.10¾
Fine Tube Rope—			
4-ply	.12½	@	.12¾
3-ply	.13¼	@	.13¾
2-ply	.14¼	@	.14¾
Paper Makers Twine			
Balls	.09½	@	.11¼
Box Twine, 2-3 ply	.11¼	@	.12¼
Jute Rope	.05	@	.10
White Hemp	.12¼	@	.12¾
Jute Sisal—			
No. 1 Basis	.10	@	—
No. 2 Basis	.09	@	—
New Zealand Sisal	.10	@	—
Sisal Lath Yarn—			
No. 1	.12	@	.14
No. 2	.10	@	.12
Manila Twine	.23	@	.28

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.10
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¾	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04½	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04½	@	.06¾
Sulphite Screenings	.03	@	.03½
Manila Tissue	.07	@	.07¼
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	27.50	@	—
Solid News	30.00	@	—
Manila Lined Chip	37.50	@	—
Patent coated	47.50	@	—
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.50	@	1.55
No. 1 Hard White	1.40	@	1.45
No. 1 Soft White	1.00	@	1.10
Ledger & Writings	.55	@	.60
Solid Books	.45	@	.50
Blanks	1.00	@	1.05
Krafts	.70	@	.80
New Kraft Cuts	1.15	@	1.25
Manila Env. Cuts	1.25	@	1.30
Ex. No 1 Manila	.90	@	1.00
Print Manila	.30	@	.40
Overissue News	.45	@	.50
Old Newspapers—			
No. 1	.45	@	.50
Mixed Papers—			
No. 1	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.09
Manila Sul., No. 1	.03	@	.05
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¾	@	.04¼
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.02¾
Common Bogus	.03	@	.04
(Delivered Philadelphia)			
News Print Rolls	46.00	@	—
Straw Board	32.00	@	—
News Board	30.00	@	—
Chip Board	30.00	@	—
Wood Pulp Board	70.00	@	80.00
Binder Boards—			
No. 1, per ton	73.00	@	75.00
No. 2, per ton	62.00	@	65.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01	@	.01½
Blue Overall	.03	@	.03½
Cottons—According to grades—			
Washable, No. 2	.01	@	.02
New Blue	.01	@	.02
Fancy	.01½	@	—
New Black Soft	.02	@	.03
New Light Seconds	.01	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.03½
No. 2 Mixed	.02½	@	.03
Corduroy	.02	@	.02½
New Canvas	.03½	@	.04
New Black Mixed	.02½	@	.03

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.00
Miscellaneous	1.75	@	2.00
M. G.	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.80

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	—
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	1.60	@	1.70
No. 2 Hard White	1.50	@	1.60
No. 1 Soft White	1.40	@	1.45
No. 2 Soft White	1.10	@	1.15
No. 1 Mixed	.50	@	.60
No. 2 Mixed	.40	@	.50
Solid Ledger Stock	1.00	@	1.10
Writing Paper	.65	@	.70
No. 1 Books, heavy	.55	@	—
No. 2 Books, light	.40	@	—
No. 1 New Manila	1.10	@	1.15
No. 1 Old Manila	.60	@	.65
Print Manila	.40	@	.45
Container Manila	.35	@	.40
Old Kraft	.85	@	.90
Common Paper	.20	@	.25
No. 1 Mixed Paper	.25	@	.30
Straw Board, Chip	.25	@	.30
Binders Board, Chip	.25	@	.30
Corrugated Board	.35	@	.45
Overissue News	.40	@	.55
Old Newspaper	.27½	@	.35

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	—	@	.04¾
No. 2 Kraft	—	@	.02¾
(F. o. b. Boston)			
Southern Kraft	—	@	.02½
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	—	@35.00
Straw Board in Sheets, basis 35s to 70s			@40.00
Filled News Board		—	@30.00
Chip Board	27.50	@	—
Chip Board (Creasing)	27.50		@30.00
Single Manila Lined Chip		—	@37.50
Single White, Patent Coated News Board—			
Bender	45.00		@55.00
Wood Pulp Board	70.00		@75.00
Binder Boards	62.00		@75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Soft White	1.40	@	1.60
No. 1 Old Manila	.50	@	.60
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.40	@	.50
Solid Ledger Books	1.20	@	1.40
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.60	@	.70
No. 1 Books, heavy	.55	@	.65
No. 1 Books, light	—	@	.30
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.50	@	.60
White Blank News	.80	@	.85
No. 1 Kraft	.65	@	.75
Manila	.80	@	.90
No. 1 Mixed Papers	.12½	@	.15
Print Manila	.30	@	.40
Overissue News	.35	@	.45
Old Newspapers	.30	@	.35
Box Board, Chip	.17½	@	.20
Corrugated Boxes	—	@	.20
Screening Wrappers	.25	@	.32½

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	.95	@	1.00
Domestic	.60	@	.70
Manila Rope—			
Foreign	1.37½	@	1.45
Domestic	—	@	1.60
Transmission Rope	—	@	.90
Mixed Strings	.25	@	.30
Jute Rope	—	@	.75
Jute Carpet Threads	.25	@	.30
Bleachery Burlap	1.75	@	2.00
Scrap Burlap	.50	@	.75
No. 1 Scrap Burlap	.60	@	.85
Scrap Sisal	.90	@	—
Scrap Sisal for shredding	—	@	.90
Wool Tares, heavy	.65	@	.75
New Burlap Cutting	.75	@	.90
Australian Wool Pouches	2.00	@	—
Heavy Baling Bagging	.90	@	1.10
Paper Mill Bagging	.50	@	.60
Bagging No. 2	.20	@	.25
No. 1 Burlap	1.75	@	2.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	—	@	.01½
New White No. 1	.03¾	@	.04
New White No. 2	.02¾	@	.03¼
Silesias No. 1	—	@	.03
New Black Silesias	.02½	@	.02¾
New Unbleached	.05	@	.05¼
Fancy	—	@	.02½
Washable	—	@	.01¾
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03½
O. D. Khaki	.03½	@	.03¾
Corduroy	.02¾	@	.03
New Canvas	—	@	.05
B.V.D. Cuttings	.04	@	.04¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	1.50	@	1.75
White No. 2—			
Repacked	.02¾	@	.02½
Miscellaneous	.02	@	.02¾
Twos and Blues	.90	@	1.00
Thirds and Blues—			
Repacked	.75	@	.85
Miscellaneous	.70	@	.75
Black Stockings	2.00	@	2.25
Roofing Stock—			
No. 1	.35	@	.40
No. 2	.30	@	.35
No. 3	.25	@	.30

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.50	@	.60
New No. 1 White Shirt Cuttings	3.75	@	4.00
Dutch Blues	1.25	@	1.50
New Checks & Blues	2.25	@	2.50
Old Fustians	—	@	.75
Old Linsey Garments	.55	@	.65

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10½	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¾	@	
No. 2 Colored	.09	@	.10½
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.65	@	—
No. 3 M. F. (Carloads)	6.20	@	—
No. 4 M. F. (carloads)	5.25	@	—
No. 1 S. C. (carloads)	7.15	@	—
No. 3 S. C. (carloads)	6.65	@	—
No. 4 S. C. (carloads)	5.70	@	—
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.50	@	—
No. 3 Coated and Litho	10.00	@	11.50
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.40	@	—
White Wrap	2.00	@	—
"B" Manila	4.90	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.40	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

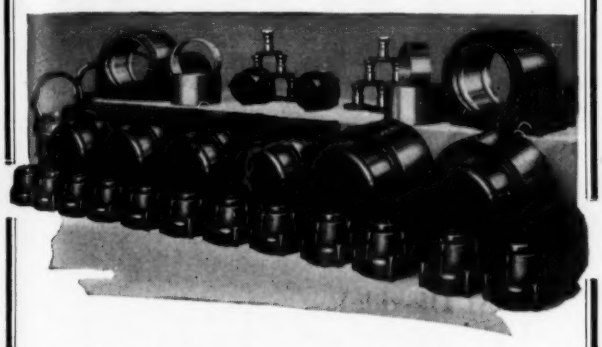
Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	48.00	@	58.00
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	1.80	@	—
Soft White	1.40	@	—
White Blk. News	1.25	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	—
Light and Crumpled Book Stock	.80	@	—
Ledgers and Writings	1.00	@	—
Manilas—			
New Manila Cut	1.25	@	—
Printed Manilas	.55	@	—
Kraft	1.75	@	—
News and Scrap—			
Strictly Overissue	.50	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09½	@	.10
Fancy Shirt Cuttings	.06	@	.06½



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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

SIXTY-FIRST YEAR

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